Mandatory Motherhood and Compulsory Careers: An Application of Theory of Planned Behaviour to Young Women's Mothering and Career Intentions

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Abstract

Young adults make many decisions that may impact their future adult lives, including decisions about mothering and careers—two life roles often in opposition. Using a mixed-method design, the theory of planned behaviour (TPB) model and an expanded TPB model considering other-role beliefs were tested. In Study 1, young women ($N = 22$) from a large Western Canadian University responded to questions eliciting beliefs about mothering and career intentions from which belief-based TPB items measuring attitudes, subjective norms, and perceived control were created. In Study 2, nulliparous young women ($N = 349$), ages 18-29, completed a questionnaire assessing role intentions, role salience, gender-role traits, anticipated work-family conflict, specific fertility knowledge and intentions, and TPB beliefs. Women's role intentions were independent of each other ($r = .03$): Most women intended to pursue both roles (mothering $n = 301$; careers $n = 344$). Career salience was associated with greater intended age at first birth and associated with decreased desired family size, anticipated distress if infertile, and intended use of assisted reproductive technologies (ART). Mothering salience was associated with lower age at intended first birth and increased number of children, distress if unable to have children, and intentions to use ART. Mothering attitudes, subjective norms, and perceived control accounted for 53% of the variance in mothering intentions. Career attitudes and career subjective norms further contributed, but minimally, to mothering intentions over and above the basic TPB model. Partially supporting the TPB, career attitudes and perceived control accounted for 8% of the variance in career intentions. Mothering subjective norms further contributed to career intentions over and above the basic TPB model. The current research supports the TPB over the theory of reasoned action; however, it may also be useful to consider other-role beliefs when examining women's role intentions. Moreover, role salience, gender traits, and anticipated work-family conflict—while controlling for TPB beliefs—predicted additional variance in role intentions, suggesting such other factors are not entirely accounted for by the TPB (as posited in the theory) and should be considered in addition to TPB constructs. Implications for intervention and policy and directions for further study are discussed.

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This work is dedicated to my family and to my partner in all aspects of life, Dale:

You have made seeking both a career and family easier choices. I hope others might have such similarly wonderful supports such that they will feel freer to pursue their own choices — whatever they may be.

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LIST OF ABBREVIATIONS

ANOVA = analysis of variance
ART = assisted reproductive technology
BSRI = Bem Sex Role Inventory
CAD = direct career attitudes
CA = belief-based career attitudes
CPBCD = direct career perceived control
CPBC = belief-based career perceived control
CSND = direct career subjective norms
CSN = belief-based career subjective norms
MAD = direct mothering attitudes
MA = belief-based mothering attitudes
MANOVA = multivariate analysis of variance
MCAR = missing completely at random
MPBCD = direct mothering perceived control
MPBC = belief-based mothering perceived control
MSND = direct mothering subjective norms
MSN = belief-based mothering subjective norms
PCB = Perceived behavioural control
SEM = structural equation modeling
SPSS = statistical package for social sciences
TPB = theory of planned behaviour
TRA = theory of reasoned action
VIF = variance inflation scores
WFC = work-family conflict
WFCS = work family conflict scale

Chapter 1. Mandatory Motherhood and Compulsory Careers: An Application of Theory of Planned Behaviour to Young Women's Mothering and Career Intentions

"The obligation for working mothers is a very precise one: the feeling that one ought to work as if one did not have children, while raising one's children as if one did not have a job." ~ Annabel Crabb from *The Wife Drought*

Young adults must make a number of decisions regarding their future adult lives, goals, and values. Chief among these numerous decisions are choices about parenthood and career—two roles that tend to be in direct opposition to each other. Family formation and finding personal and career self-fulfillment are perceived as competing factors or even mutually incompatible goals (Roloff & Dorbritz, 1999, as cited in Kemkes-Grottenthaler, 2003). These roles may be in conflict given that the pursuit of education and career opportunities occurs during women's most fertile years (i.e., early adulthood, less than 35 years of age). Even after reaching career goals, women may consider parenting—and the time commitment involved (e.g., parental leave after childbirth, children's sick days)—to be in direct conflict with pursuing career advancement opportunities (Kemkes-Grottenhaler, 2003). These costs and the conflict between roles appear to be particularly salient to women[1] (Duxbury, Higgins, & Lee, 1994; Ernst Kossek & Ozeki, 1998; Wisman & Goldenberg, 2005) compared to men in heterosexual partnerships given that women disproportionately engage in the family role and housework duties—despite equal valuing of this role by both partners and despite equal engagement and valuing of the career role (Kneževic, Gregov, & Šimunić, 2016).

The perceived costs to career due to parenthood also appear to be reflected in the hiring practices of employers and beliefs of well-educated professionals. For example, employers tend to consider parents, and women in particular, as inherently less productive or ideal potential employees (Williams, Alon, & Bornstein, 2006). Women may also be stereotyped as unable to succeed in careers thought to require masculine values given women's assumed feminine values (Jones & Schneider, 2010). Moss-Racusin, Dovidio, Brescoll, Graham, and Handelsman (2012) found women with the equivalent accomplishments and capabilities of men were viewed as less

[1] The research literature tends to be heteronormative, focusing on cis-gender women and men. Consequently, the findings reported in the literature review that follows apply to cis-gender women (and men, where included), and it may not reflect the experiences, concerns, and beliefs of individuals from various other sexual orientations or gender identities.

competent and less desirable applicants—a finding that also may in part be explained by the perception of greater potential for reduced productivity associated with female employees of childbearing age. Indeed, Williams et al. (2006) argued that many individuals hold the belief that parenthood and career roles are not only incongruent but are also inherently damaging to each other. That is, to be a good professional one must not also parent and vice versa. Miller (2011) found that women experience a decline in the growth rate of their earnings following the birth of children. Although it is possible that mothers choose to decrease their engagement in work after the birth of children, given the biases and preconceptions about working mothers noted above, it is also likely that career women who are mothers receive fewer opportunities and less encouragement for training and advancement. In fact, despite reportedly similar wages for men and women who were not mothers, mothers' wages have been found to be 10-15% less than men's—even after controlling for education and work experience (Waldfogel, 1998). This wage penalty for mothering increases with each additional child (Avellar & Smock, 2003; Grimshaw & Rubery, 2015). Although some have found that each child is associated with a wage penalty between 13-16% (Gangl & Ziefle, 2009), others report that the wage penalty is generally meaningfully evident only for women with 3 or more children (i.e., 7.5% decrease; Pal & Waldfogel, 2014). However, the wage penalty for mothers can also vary significantly based on mothers' age and country (see Grimshaw & Rubery, 2015). Not surprisingly, given the persistence of negative perceptions of working mothers, Avellar and Smock (2003) indicate that the financial penalty for motherhood has not lessened over the course of four decades.

The negative societal perceptions and penalties for having joint career and mothering roles may force individuals to feel that they have to choose between career and reproductive roles (Kemkes-Grottenhaler, 2003). Despite policy efforts to reduce biases against parents in the workplace, it is likely many young childless adults are aware of the potential consequences of trying to balance both career and parenting roles prior to making their own reproductive and career decisions. That awareness of potential role conflicts may ultimately impact young adults' intentions to parent and to pursue a career as well as other aspects of their intended reproductive (e.g., reduced family size, delayed parenting, inability to have children after delays for education and/or career) and career (e.g., hours worked, occupation type) patterns.

Given the potential negatives associated with these role pursuits, the purpose of the current research is to examine the factors that may contribute to women's early mothering and

career intentions. Although various attitudinal, social, and situational factors have been identified in research examining women's role intentions, previous research has tended to focus only one role decision at a time. However, given the aforementioned intricately intertwined nature of these roles, it seems important to consider factors associated with both role intentions in conjunction: Beliefs held about one role may impact beliefs held—and decisions made—about the other. That is, it seems likely that the attitudinal, social, and situational factors specifically associated with each of those closely connected roles may also be related to other role decisions.

The purpose of the current research was to apply the theory of planned behaviour (TPB; Ajzen, 1985, 1987, 1991) to young women's mothering intentions and career intentions. The TPB was selected as a framework for this research because it could be a potentially useful framework for helping to contextualize previous literature findings (e.g., attitudinal, social normative, and perceived control factors) and it could help to identify specific targets for future intervention and social policy changes. However, in contrast to previous research examining the applicability of the TPB to role intentions, the primary goal of the research was to expand upon the basic model proposed in the TPB to include attitudinal, social, and situational factors that are associated with other roles when predicting role intentions. Building upon the burgeoning fertility literature that uses the TPB to understand women's mothering intentions, my objective in the current research was to examine the utility of the basic TPB model for mothering intentions while also expanding the TPB model to consider potentially relevant decision-making factors associated with careers. Similarly, I also sought to examine the applicability of the TPB to career intentions while taking into account the potential contribution of mothering-related beliefs that could impact young women's career decision making. To date, no researchers have used the TPB to examine the intersection of careers and mothering to determine whether and how TPB factors associated with each role intention may also contribute to other role intentions. A detailed review of the literatures relevant to young women's mothering and career intentions, with emphasis on potential TPB-related attitudinal, social normative, and perceived control factors is provided below, followed by a review of alternate theories of intentions and a review of TPB literature and the applicability of TPB to understanding young women's mothering and career intentions.

1.1 Childbearing & Career Trends

Although more than 90% of Canadians report intentions to become parents (Edmonston, Lee, & Wu, 2010), there are an increasing number of individuals actively choosing to remain

childfree (Blackstone & Dyer Stewart, 2012). In fact, up to 20% of women born in 1975 or later in Great Britain are expected to remain childless (McAllister & Clarke, 2000). The number of women opting into childfree lives rises to one in four when estimating rates of voluntary childlessness in women with graduate-level education (Kneale & Joshi, 2008).

There are also important changes in the childbearing patterns of those who intend to parent. Specifically, compared to previous generations, individuals are choosing to have much smaller families (Health Canada, 2005). More women are also choosing to delay parenthood (Beaujot, 2004). For example, 54.4% of all first-births in 2013 (Statistics Canada, 2016), compared to just 14% in 1983 (Daniluk, 2010), were to women 30 years old or more. This trend towards later-life motherhood has been observed in various other countries throughout the developed world (Johnson & Tough, 2012; Virtala, Vilsk, Huttunen, & Kunttu, 2011).

Throughout these same past few decades that have seen increased maternal age at first birth, women have also increasingly aspired to higher education and employment. Compared to any other point in Canadian history, proportionately more women are in the work force (Ferrao, 2010). Indeed, not only are more women employed, but more women are pursuing higher education than ever before (Turcotte, 2011). Yet, researchers have also noted that there is an "opt-out" revolution occurring in the careers of highly trained women who are working mothers. Some have suggested that opting out is not only limited to discontinuing work but also includes women who make conscious decisions to not aspire to more advanced positions at their places of employment (Mainiero & Sullivan, 2005). Approximately one in four women—both mothers and childfree women—report leaving work at some point in their careers (Hewlett & Luce, 2005). Cabrera (2007) found 35% of women who opt out of the workforce do so for family reasons and nearly 69% of all women who opt out—even if the opt out was initially for nonfamilial reasons—ultimately delay returning to the work force for childrearing reasons.

1.2 Mothering Decisions

Mothering was long held as women's chief responsibility or primary form of work (Jamieson, Millburn, Simpson, & Wasoff, 2010). Motherhood has been so central to female life that the role has been referred to as a non-optional mandate (Russo, 1976, 1979). However, as noted above, an increasingly greater number of women are choosing to postpone the adoption of the mothering role, are choosing to have fewer children, or are choosing to opt out of mothering entirely (Sanderson & Dubrow, 2000), suggesting that—to some degree—the mothering role has

become perhaps less mandatory than it has been in the past. Somers (1993) found that women who choose to be childfree cite career, freedom and independence (in relation to employment as well as lifestyle preferences, such as leisure, travel, community involvement), and dislike of childrearing activities as the primary reasons for not choosing to have children. Indeed, women who pursue professional careers are more likely to postpone childbearing (Shreffler, 2017). Voluntarily childfree women have also been found to be more likely to reject traditional ideologies supporting mothering as well as either reject or hold less strong beliefs about the "benefits" of having children, such as pride and achievement, pleasure in daily activities, companionship, desire for care when elderly, providing love, having grandchildren/perpetuating family line, love of child, beliefs in being a good parent, and duty to society (Heaton, Jacobson, & Holland 1999; Majumdar, 2004; Somers, 1993).

Although more women are opting out of mothering and into childfree lifestyles, women who choose to be childfree may still experience stigma for defying the mandatory motherhood expectation. Many childfree women report being perceived by others as unfeminine and, for some, perceiving themselves as unfeminine (Kelly, 2009). However, the belief that motherhood is central to feminine identity is challenged by women who are voluntarily childfree and who are yet able to maintain a positive sense of feminine identity disentangled and distinct from motherhood (Gillespie, 1999; Kelly, 2009). Although voluntarily childfree women represent a subset of the population, it is a growing subset and there are no indications that the childfree revolution is ebbing (Abma & Peterson, 1995; Blackstone & Dyer Stewart, 2012; Sanderson & Dubrow, 2000). Indeed, it is possible that as an increasingly greater number of women continue to opt into childfree lives, such decisions may become more normalized and the implicit social obligation to mother may weaken over time.

Nevertheless, the vast majority of women, whether intentionally or unintentionally, ultimately become mothers. Moreover, a number of mothers report that bearing children was largely intentional even if the specific aspects of the mothering experience were unintentional (e.g., timing, number). For example, although the timing of motherhood may not have occurred exactly as intended, in Spéder and Kapitány's (2009) longitudinal study of women's ($N = 4471$) intended and realized births, 70% of women conceived within the intended timeframe and another 20% who had expressed intentions to become mothers reported they had become pregnant sooner than intended. Only 10% reported their pregnancies were entirely unintentional

and this is in line with previous research findings (Mosher, Jones, & Abma, 2012). Thus, becoming a mother is often an intended or otherwise generally (or loosely) planned behaviour.

Mothering intentions are not formed in the absence of any and all other life experiences. The questions of how and when women make such determinations (i.e., whether or not to have children and at what age) have long been examined in the literature. Indeed, a number of factors have been identified as playing a role in the development of women's intentions to bear children as well as the revision of women's intentions over time. Researchers have generally focused on economic valuing of roles, psychological motivations and beliefs about mothering, social and environmental factors as well as general life circumstances, all of which women may implicitly or explicitly consider.

Some early childhood experiences that have been identified as contributors to mothering intentions include the relationships women had with their own mothers (Jennings, Sullivan, & Hacker, 2012; Miller, 1992) and their mother's gender roles, such that more traditional mothers are associated with daughters' expressions of greater intentions to mother (Ex & Janssen, 1998; Goodnow, 1992). Indeed, the extent to which women's mothers engaged in primarily domestic work impacts their future childbearing intentions and behaviours (Witt, 1997). Tavares (2010) and others (e.g., Miller, Bard, Pasta, & Rodgers, 2010) also identified daughters' own particular personality and gender role traits as important potential contributors to mothering intentions. Some such personality traits that predict greater mothering intentions include affiliation and nurturance (Miller, 1992) and traits that predict earlier mothering intentions include agreeableness, extroversion, and neuroticism (Miller et al., 2010). In contrast, lower mothering intentions are associated with greater autonomy and achievement focus (Miller, 1992) and greater delays in motherhood are associated with greater conscientiousness and openness (Miller et al., 2010). Similarly, Hutteman, Bleidorn, Penke, and Denissen (2013) argued personal characteristics of both partners were important to consider in understanding fertility intentions. They found aggressiveness (when higher in men) and self-esteem (when higher in both partners) were indirectly related to higher fertility intentions by acting upon individuals' and their partners' parenting expectations.

Role salience is another factor known to predict parenting intentions, as parenthood is often the most salient role to individuals' identities (Katz-Wise, Priess, & Hyde, 2010). To that end, parental role salience and parenting intentions are highly correlated (r = .66) for young

adults (Yaremko & Lawson, 2007). Perhaps unsurprisingly, compared to men, the parenting role identity is viewed by women as more important (Kerpelman & Schvaneveldt, 1999; Yaremko & Lawson, 2007). Moreover, based on structural equation modeling results considering various factors in the formation of fertility intentions, McQuillan, Greil, Shreffler, and Bedrous (2014) found that mothering salience uniquely contributes to women's fertility intentions, accounting for 6.4% of the variance in parenting intentions. However, mothering role salience also moderates the contributions of other predictive psychosocial variables (e.g., religiosity, gender role traits, social supports, value of leisure time, relationship status, education, income).

Women express a variety of beliefs—positive and negative—about having children. Researchers have reported a number of perceived economic and psychosocial costs and benefits to childbearing that women identify as important in making their fertility decisions. For example, some women express the belief that having children will improve their intimate relationship or their satisfaction in life (Cavalli & Klobas, 2013). Langdridge, Sheeran, and Connolly (2005) found that 34 out of 35 reasons they identified in the literature predicted mothering intentions in their sample of 874 married childless adults under the age of 40. Further, those who intended to have children and those who did not differed on a number of reasons for having children (e.g., continuing the family name, that parenting would be good for the intimate partnership, would be fun, and that they felt driven by their biological clock to have children) and reasons for not having children (e.g., against partner's wishes, less time with partner, emotional strain, interference with career, responsibility, lacking patience required for children). Moreover, relative to men, women more strongly endorsed biological drive as a reason for wanting children and parenthood being against their partners' wishes as a reason for not wanting children. Compared to women, men more strongly rated reasons against having children overall, suggesting that the costs were not as salient to women; however, the positive reasons were not salient for women either—aside from being goaded into desiring children by their biological drives. In contrast, others have found that women believe that motherhood involves inherent costs to leisure time, and this has been associated with devaluing motherhood for nulliparous women (McQuillan, Griel, Scheffler, & Tichenor, 2008).

Lawson (2004) also examined young adults' perceptions of—or anticipation of—parenting. Factor analysis revealed six main dimensions of parenting that young adults anticipate: enrichment, isolation, commitment, instrumental costs, continuity, and perceived

support. In addition to higher overall positive perceptions, young adults who expressed intentions to pursue parenting perceived enrichment (e.g., rewarding, pride, closer partner relationship), continuity (e.g., grandparent in future, old age security), and perceived social support (e.g., friends and family to help care, community social support) to be important factors. Although instrumental costs (e.g., financially expensive, emotionally exhausting) and commitment (e.g., never-ending responsibility, dependent for rest of life) were not associated with intentions, isolation (e.g., interfere with spouse time, interfere with leisure time) considerations were negatively correlated with intentions to parent. Instrumental costs and commitment, however, were not associated with salience, suggesting that young adults did not consider these factors to be important to their expectations of parenting. Lawson argued that young adults may simply accept such costs as a part of parenting or that these costs are less salient to decisions of younger individuals because acting on such intentions will occur in the more distant future.

As Lawson's (2004) study indicates, parenting intentions are associated with perceptions about how parenting potentially changes social interactions (e.g., isolation, social support). Particular social figures or affiliations also play a role in women's mothering intentions and childrearing outcomes in other ways. Families and various community connections hold the potential to either facilitate or hamper both intentions to mother and childrearing practices. Moreover, women's personal attitudes or evaluations of mothering roles may be further encouraged—and in some cases even outweighed—by social pressures to bear children. Indeed, women report high social pressure (e.g., from spouses/partners, family, and friends) to reproduce (Bergart, 2000; Cassidy & Sintrovani, 2008; Letherby, 1999). Social pressures to parent may be so intense that women choose to undergo stressful artificial reproductive technology procedures to fulfill their mothering roles. For example, although many women undergoing in vitro fertilization express intrinsic desires to parent, such as personal and relationship fulfillment or the need to nurture, they also describe feeling social pressure to parent from partners, family, and friends, and they express feeling obligated to fulfill an expected social role or social duty (Cassidy & Sintrovani, 2008; Langdridge, Connolly, & Sheeran, 2000; Langdridge et al., 2005; Purewal & van den Akker, 2007). Clearly, various members of social networks can significantly influence mothering intentions and the extent to which women may go to achieve motherhood over and above—and at times in spite of—their personal attitudes about mothering.

Perhaps the most obvious of potential social influences is the partner required for biological reproduction—except in the less common practice of conceiving through donor sperm use. The availability of a partner has a strong influence on women's pregnancy desires and their actual achievement of those desires (Stanford, Hobbs, Jameson, DeWitt, & Fischer, 2000; Wesolowski, 2015). The length of the relationship, which is arguably a simple and limited marker of relationship quality, is also a significant positive correlate of mothering intentions (Langdridge et al., 2005). Concordance in parenting desires between both partners in the couple is also an important factor for women when forming intentions (Rosina & Testa, 2009). Although their partners' desires are important to women (Langdridge et al., 2005), women's desires for children, relative to men's desires for children, tend to influence couple's fertility to a mildly greater extent (Rotkirch, Basten, Väisänen, & Jokela, 2011).

Family members can also contribute strongly to mothering intentions. Keim, Klärner, and Bernardi (2009) argue that parents are not only important in fostering mothering intentions through interactions, but they are also a source of social pressure. The social pressure from parents can work to decrease or increase mothering intentions and behaviours. For instance, mothers who are more educated tend to have daughters who marry later and who tend to postpone mothering (Bates, Maselko, & Schuler, 2007). On the other hand, parents may implicitly or explicitly convey expectations about parenting. Mothers' preferences for lower levels of education, earlier marriage, larger families, and traditional stay-at-home mother roles predict their daughters' earlier engagement in parenthood (Barber, 2000). Parents may also be explicit in conveying their opinions about their children's obligations to provide grandchildren (Barber & Axinn, 1998; Callan, Kloske, Kashima, & Hennessey, 1988); the pressure to provide grandchildren has even resulted in daughters being "gifted" by their parents with fully-funded, costly, medical procedures to extract and freeze their eggs (Gootman, 2012).

Kotte and Ludwig (2011) posited that significant others' fertility patterns, such as that of parents and siblings, impact individuals' fertility intentions through two mechanisms: *transmission* of fertility (i.e., from parents to children) whereby fertility intentions are learned and fertility *contagion* (i.e., from peers to individuals) whereby fertility intentions are influenced by exposure to children resulting in increased desire for reproduction. The researchers found the sibling contagion effects poorly predicted fertility intentions. In contrast, they found support for the intergenerational transmission of fertility patterns between parents and their children—a

finding that has been well supported by other researchers (Booth & Kee, 2009; Murphy & Wang 2001). Nevertheless, there is also ample support for the role of social contagion with siblings, extended relatives, and peers (Bernardi, 2003; Bühler & Fratcsak, 2007; Keim et al., 2009; Keim, Klärner, & Bernardi, 2013). Still others have found that having social capital (greater support) can have a neutral impact on childbearing. Balbo and Mills (2011) reported that having a child is more probable when the individuals' sibling also has a child, but once an individual has at least one child, higher social capital does not increase intentions to have further children.

The influence of social relationships on mothering intentions is not limited to partners and family. Potentially less intimate relationships may contribute to mothering intentions and contagion of fertility. The childbearing experiences of friends or peers can impact fertility decisions. For example, factors such as fertility behaviours of extended relatives, friends, or colleagues in employment settings are also positively correlated with women's fertility behaviours (Balbo & Barban, 2014; Montgomery & Casterline, 1996; Pink, Leopold, & Engelhardt, 2014). Montgomery and Casterline (1996) argue that social influence, or the extent to which one desires to conform to perceptions of community and societal values, also impacts fertility intentions. For instance, broader societal pressure related to (often negative) perceptions of childfree individuals and single-child families as well as beliefs that families with three or more children are large can also shape women's reproductive intentions (Iacovou & Tavares, 2011). Finally, religious and group or community membership has also been identified as a contributing factor to women's reproductive intentions (Manski & Mayshar 2003; Philipov & Berghammer, 2007; Vignoli & Régnier-Loilier, 2009; Vignoli, Rinesi, & Mussino, 2013). Indeed, more religious individuals express greater intended and achieved fertility than individuals who report that they were less (or not at all) religious (Hayford & Morgan, 2008; Philipov & Berghammer, 2007). However, Hayford and Morgan (2008) elaborated that religiosity and fertility were also both positively associated with traditional gender roles and family attitudes and found that these attitudinal factors accounted for a large amount of fertility intentions otherwise captured by religiosity.

Although the majority of women eventually become mothers as originally intended, Liefbroer (2009) argues that many women are forced to alter their mothering intentions over time. Throughout their lives, a small subset of women tend to increase their intended family size; however, these women are generally exceptions to the rule as the vast majority of women do not

achieve their intended family size. As evidenced by population growth rates, women generally overestimate the number of children they will ultimately bear and tend to make downward changes to intended family size as they age (Liefbroer, 2009; Porter, Bhattacharya, & Teijlingen, 2006). The intentions that young women initially form may be strongly guided by their attitudes and social influences; however, the adjustments that women make over time may be guided by anticipated constraints and facilitators as well as unanticipated events.

Intended childbearing and number of children may be related to demographic characteristics as well as various life course events. Researchers have argued that the changes to mothering intentions over time may be attributable to a number of circumstances that women may or may not anticipate. These factors tend to be both micro- and macro-level constraints. That is, intentions to mother are shaped by various individual factors as well as various societal-level factors (Wesolowski, 2015). For instance, social supports can either be a facilitator for fertility if available or a constraint if unavailable. Tanskanen and Rotkirch (2014) found that higher levels of accessibility from women's parents (and parents-in-law), enabling the provision of emotional support and childcare, increased women's intentions to parent.

Women have described feeling as though many additional constraints on mothering were beyond their control (Porter et al., 2006). For example, Arnocky, Dupuis, and Stroink (2012) reported that concerns about the environment as well as health consequences of pollution were associated with lower intentions to reproduce—although this was mitigated to some degree for those who had more positive attitudes towards childbearing. Several other important perceived constraints include gender role dynamics (e.g., gender role personality characteristics, division of labour), housing (e.g., stability of housing, location), finances (e.g., employment), social policies (e.g., parental leave, childcare, tax benefits or monetary incentives), other role intentions (e.g., student, career professional), and perceptions of role incompatibility (e.g., conflict, potential for personal and/or child harm).

Gender roles contribute to mothering intentions in terms of traits, attitudes, and behaviours. For example, greater identification with more traditionally gendered (feminine) traits, which tend to be associated with mothering, predicted greater intentions to mother (Yaremko & Lawson, 2007). Greater engagement in egalitarian gender roles (i.e., engagement in domestic and paid work) has been found to negatively impact women's childbearing intentions; however, egalitarian gender-role engagement in both partners positively influences women's

childbearing intentions (Bernardi, Ryser, & Le Goff, 2013). Importantly, gender-role traits have also been found to vary according to geographical locations (e.g., urban versus rural), and women living in more rural farming areas tend to subscribe more to traditional gender traits and roles (Hughes, 1997; Little, 1997).

Not only is geographical location important, but housing has also been identified as an important factor in women's childbearing intentions. Vignoli et al. (2013) argue that secure housing is positively correlated with fertility intentions. Similarly, Liefbroer (2009) found that intended family size was most strongly related to living arrangements (i.e., home circumstances distinct from marital or relationship status)—over and above a number of other situational factors. In areas where the housing market is higher, women tend to postpone childrearing by three to four years (Clark, 2012). It is possible housing stability and concerns about housing costs are also reflective of financial stability. Toulemon and Testa (2005) reported that individuals who have lower levels of income express lower fertility intentions. Women's intentions to bear children increase with their income (Spéder & Kapitány, 2009) and the probability of having a first child rises along with income as well (Toulemon & Testa, 2005). Further childbearing intentions after the birth of a first child, however, may be adjusted downward in the face of financial constraints (Porter et al., 2006).

Finally, education and careers play a significant role in mothering decisions. Liebroer (2009) reported that in addition to living arrangements, mothering intentions were related to changes in education and careers—a finding that has oft been described in the literature (Benzies et al., 2006; Kerpelman & Schvanveldt, 1999; Kneale & Joshi, 2008; Toulemon & Testa, 2005; Tydén, Svanberg, Karlström, Lihoff, & Lampic, 2006). Although described in more detail below, the literature suggests education and careers are associated with both positive and negative contributions to mothering intentions. One possible reason some studies (e.g., Miller, 2011; Spéder & Kapitány, 2009) report education or careers can be conducive to fertility is that these factors may afford women the ability to secure housing and the financial resources they consider necessary for having children. However, education and careers can also be incompatible with mothering. Briefly, Heaton and Jacobson (1999) found that women's childbearing intentions were negatively influenced by education and beliefs about the impact of a career on mothering (e.g., potential hardships to children from mother's work). Specifically, both higher education and stronger beliefs about harm to children from multiple roles were associated with greater

postponement or altogether opting out of motherhood. Unfortunately, although women may consider the potential harm from juggling multiple roles, the reproductive literature suggests that women do not consider the potential harm of postponing motherhood when forming their mothering and career or educational intentions. Yet, women's age is also frequently described as an important variable that relates to women's mothering decisions (Langdridge et al., 2005; Wesolowski, 2015).

1.3 Implications of Postponing Mothering

As noted above, an increasingly greater proportion of women are postponing motherhood beyond age 30. Although Martin (2000) found that postponement of first birth past the age of 30 is associated with higher education, some researchers (e.g., Cooke, Mills, & Lavender, 2012) have suggested that postponement is not a *conscious* decision for some women. Instead, they argue the timing of mothering may be influenced by a number of factors outside of women's control. It is also possible that relevant factors that are potentially outside of their awareness when initially forming intentions may ultimately impact timing of motherhood. Regardless of whether women are consciously choosing to delay mothering or whether postponement is an unanticipated result of conflicting pursuits (e.g., higher education, careers, financial stability, or other life goals), a number of potential negative sequelae may occur as a result of delayed parenting and/or significantly reduced family size, including population demographic concerns, declining fertility, and increasing maternal and infant health risks.

Shifts in fertility patterns have broad societal-level implications. The vast majority of Western nations have growing population replacement concerns. For example, based on data from 2003, Kalwij (2010) reported birth rates varied across nations from 1.41 births per woman in Spain to 2.39 births per woman in Ireland. However, despite some variability, Kalwij also noted Western, European, and Nordic countries had an overall rate of 1.76 births per woman—well below the estimated replacement value of 2.1 births per woman. In Canada, at 1.61 (Statistics Canada, 2017a), this rate is even lower than Kalwij's (2010) reported international average. Some concerns have been raised about the combination of aging populations and low fertility (Castle, 2003; Gubhaju & Moriki-Durand, 2003). Specifically, as the population ages, replacement rates decline, and fewer people in younger generations are available to contribute, there is concern about the sustainability of social programs (e.g., pensions, employment insurance) and decreased economic productivity (Weston, Qu, & Parker, 2005). To combat this

decline in natural population growth and its repercussions, Canada has increased immigration: At present, two-thirds of Canada's population growth is now from migration and it is anticipated that this will rise to 80% by 2031 (Statistics Canada, 2017b).

One individual-level consequence of delayed childbearing that has been a focus in the fertility literature is the potential increased need to rely on assisted reproductive technology as the mother's age increases and fertility decreases or inability to achieve a family. For example, although healthy 30-year-old women, who are actively trying to conceive, have a 20% chance of conception per menstrual cycle, this rate declines to 5% per cycle for women age 40 (American Society for Reproductive Medicine, 2012). These age-related fertility changes are concerning, given that Daniluk (2010) reported a large number of young women report intentions to wait longer to have children. These same women also reported greater willingness to use assisted reproductive technologies (ARTs) in later adulthood. Unfortunately, despite expressing desires to parent in the future, the majority of surveyed undergraduates (Peterson, Pirritano, Tucker, & Lampic, 2012) and even advanced academics (Lampic, Svanberg, Karström, & Tydén, 2006; Svanberg, Lampic, Karlstöm, & Tydén, 2006) reported poor fertility awareness and overly optimistic beliefs about ART success—and these beliefs often occur in combination with intentions to delay childbearing. Unfortunately, women with higher career salience, increasing the likelihood of engaging in careers and the postponement of childbearing (Shreffler, 2017), are also more optimistic about delayed childbearing and are much more open to ART as well (Simoni, Mu, & Collins, 2017). Moreover, while age decreases overall likelihood of conception, postponement of mothering also shrinks the window of time women have to achieve their desired family size, resulting in fewer children born to Canadian mothers (Statistics Canada, 2017a) than might be intended. Unfortunately, women who are permanently childless after delaying trying to conceive experience grief, loss, and isolation similar to those who are childless following failed fertility treatment (Koert & Daniluk, 2017).

Recent concerns have been raised about the poor and outdated nature of the data from which some age-related fertility fear stems. Specifically, Twenge (2013) argues that, although the decline in fertility with age may still exist, fertility is not as direly impacted by age as previously believed. Despite these criticisms, even if we accept that fertility does not decline as severely as past data suggests, it is a well-established fact that the quality of oocytes declines as age increases and this is directly related to reduced chances of successful completion of fertility

intentions (Levesque, 2004; Maheshwari, Hamilton, & Bhatacharya, 2008; Scott et al., 1995; Wilkins, Warnock, & Serrano, 2010).

Beyond declining fertility, another possible consequent of delayed childbearing relates to maternal and infant health. As age increases so too does the risk of potentially poor pregnancy outcomes for mothers and their infants. Some such risks include ectopic pregnancy and spontaneous abortions (Schmidt, Sobotka, Bentzen, & Andersen, 2012), preterm birth (Hoffman et al., 2007), caesarean section (Treacy, Robson, & O'Herlihy, 2006), gestational diabetes, placenta previa and placental abruption (Cleary-Goldman et al., 2005), and perinatal mortality (Cleary-Goldman et al., 2005; Schmidt et al., 2012) as well as chromosomal abnormalities (Forrester & Merz, 2003), stillbirth (Bateman & Simpson, 2006; Schmidt et al., 2012), and low birth weight (Hoffman et al., 2007). Investigating women's awareness of the increased risk of such hazards with advancing maternal age, Cooke et al. (2010, 2012) found that many women who expressed intentions to delay mothering did not possess knowledge of these potential health risks. Yet such knowledge can impact women's intentions: When young women are provided with relevant information about fertility, there is an associated decrease in expressed intentions to delay mothering (Williamson, Lawson, Downe, & Pierson, 2014). Although proportionately more women may be choosing to—or, due to conflicting role demands, may be expected to—postpone acting on their mothering intentions, the research suggests that many women are doing so without the knowledge necessary to make fully informed decisions and that having this knowledge results in the modification of their intentions.

1.4 Changing Life Role Emphases

In tandem with the shift towards postponed parenthood, there have been shifts in contemporary social norms and expectations related to other roles. The postponed parenthood trend may be a result of the growing emphasis on personal development in contemporary society (Balen, 2005). To a greater degree, individuals tend to be more focused on personal goals and individualistic lifestyles (Bongaarts & Cotts Watkins, 1996; Lesthaeghe, 1995; Surkyn & Lesthaeghe, 2004). Such emphasis on personal development and fulfillment may be reflected by general changes in women's expression of autonomy and freedom (Gillespie, 2003) as well as career orientation (Kerpelman & Schvanveldt, 1999). Many women today also believe that the growing focus on, and expectations from society to pursue, personal development and achievement has led to greater acceptance of older maternal age (Benzies et al., 2006).

Kneale and Joshi (2008) identified several reasons that women may choose to forgo or postpone parenthood, including securing a stable partnership and accumulating assets (e.g., housing) as well as the attainment of education and career experience and the avoidance of lost earnings or lost potential for career advancement. A greater number of individuals are delaying marriage and seeking financial stability through educational and career advancement prior to parenthood (Benzies et al., 2006; Tydén et al., 2006). Finishing full-time education has become so common for many women that, for many pursuing education, completion of education is considered a prerequisite for parenthood (Arnett, Žukauskienė, & Sugimura, 2014; Blossfield & Huinink, 1991; Skirbekk, Kohler, & Prskawetz, 2004). Indeed, postponement of motherhood tends to be greatest in the most educated women (Kneale & Joshi, 2008). Throughout North American and European countries, highly educated women not only tend to have children much later in life, but—despite equivalent family size intentions expressed across women of all levels of education (Berrington & Pattaro, 2014)—highly educated women also tend to achieve completed family sizes that are much smaller than they had originally intended (Berrington & Pattaro, 2014; Testa, 2012). In Canada, these trends have also been observed: Over the past two decades, the number of women pursuing post-secondary education has increased by more than 24% (Turcotte, 2011). As Canadian fertility rates declined and maternal age at first birth increased, women's participation in the workforce also increased as much as 17.4% between 1976 and 2009 (Ferrao, 2010). The end result was that more than twice as many women—both nulliparous women and mothers—were employed in 2009 than in 1976.

Women continue to be less likely to be employed relative to men; however, the disparity is smallest amongst women and men with higher levels of education (Ferrao, 2010). Interestingly, women who are more highly educated hold more positive attitudes towards childlessness than those with lower levels of education (Koropeckyj-Cox & Pendell, 2007). Although the reasons for these discrepant attitudes about childlessness were not elucidated, it is possible that, for women who have more life-role options, the relinquishing of the mothering role may not be perceived as a grievous forfeiture. To that end, Kerpelman and Schvaneveldt (1999) noted that family-oriented women express lower career salience. The reverse is also true for career-oriented women: Compared to women who express intentions to bear children as well as women who expressed ambivalence towards childbearing, women who express career intentions and intentions to be childfree express significantly more career salience (Shreffler, Greil,

Mitchell, & McQuillan, 2014). Taken together, these differences in attitudes towards childlessness and in career salience might suggest women who want a career, and/or women with higher levels of education, may have more potential roles (e.g., student, career woman) through which they define themselves as well as gain a sense of meaning and personal satisfaction.

1.5 Women's Career Decisions

The question of how women develop interests in particular fields of employment and formulate their intentions to pursue a career (and advanced education, if necessary for a career) has been the topic of considerable curiosity and debate in the literature. Based on their literature review, Creamer and Laughlin (2005) argue women's career intentions are substantially more challenging to accurately predict than men's career intentions. Women may choose to pursue careers in response to a number of individual, social, and situational factors and for a variety of reasons that differ from those important to men. Indeed, it is important to understand the differences between men's and women's decisional processes around careers given that women's experiences with career decision-making often occur within the context of their multiple roles. For example, Betz and Voyten (1997) found men express greater self-efficacy and expectations for outcomes than women. In contrast, Rojewski and Hill (2009) found male adolescents perceived *more* barriers than did their female peers when making decisions about careers.

Work values are another area of individual characteristics that have been found to predict different career choices between genders. Rottinghaus and Zytowski (2006) examined the work values and interests of 2000 adolescent girls and boys using Super's (1970) Work Values Inventory, which examines particular values and preferences about aspects of work (e.g., beliefs about the importance of intrinsic and extrinsic rewards of work, such as opportunities to provide mental stimulation, provide a sense of achievement, allow for desired lifestyles, provide financial security, etc.). The authors found that girls and boys did not differ on facets of mental challenge, security, and variety, but they differed in terms of how much emphasis they placed on the remaining nine of 12 scales. Except for creativity, income, and independence, girls tended to rate all work value domains higher than boys. Specifically, girls' work values, ranked from highest to lowest, were co-workers followed by achievement, lifestyle, creativity, mental challenge, prestige, security, work environment, supervision, income, and variety. Further, although lower than boys' ratings, creativity and independence were still considered important to these young girls. In examining the relationship between these values and their areas of career interest, they

found that girls who had higher ratings of independence preferred activities that involved science/technical or sales/management and were less likely to prefer activities involving social/personal services. Lower levels of prestige values combined with higher levels of mental challenge and income values predicted interest in pursuing science/technical fields while higher creativity and lifestyle values predicted greater arts/communications interests.

Konrad, Ritchie, Lieb, and Corrigal (2000) conducted multiple meta-analyses of career values, job attribute preferences, and gender roles for studies with adolescents and young adults who represented a range of decisional statuses (e.g., junior and senior high school not yet decided, enrolled in post-secondary and had yet to join the workforce, already engaged in desired occupation). They found that differences between the sexes were aligned with gender roles and stereotypes, such that women stereotypically emphasized interpersonal relationships associated with careers while men emphasized more intrinsic rewards of careers. Over the time period of these studies, from the 1970s to the 1990s, Konrad and colleagues (2000) also observed changes in the relative importance of expected career attributes for women, such that women increasingly rated security, power, prestige, supervision, feeling accomplished, enjoyment, and application of one's abilities and skills as important to them.

One shortcoming of these studies (e.g., Konrad et al., 2000; Rottinghaus & Zytowski, 2006) was the focus on career interests rather than intentions—although these studies also included adolescents who have not yet engaged in career behaviours, so it is possible that some of them will ultimately choose careers as homemakers. By failing to distinguish between individuals who do and do not intend to pursue paid-work careers, these researchers are only able to draw conclusions about how values relate to interests and not how these values and interests translate into intended unpaid-domestic or paid-work careers. Unfortunately, the practice of focusing on decision-making about career-types rather than career engagement intentions is not uncommon. Nevertheless, this body of research points to the importance of work-related values and beliefs in the career preferences of individuals.

Although career salience and career intentions are sometimes conflated (e.g., see Vincent, Peplau, & Hill, 1998), career intentions—like mothering intentions—often reflect the salience attached to that role. Women who express greater career salience also express greater intentions to pursue future careers (Shreffler et al., 2014). Interestingly, although more women than men do not engage in paid work (Ferrao, 2010), women and men place just as much emphasis on their

career identities: They do not differ in terms of career-role salience overall (Kerpelman & Schvaneveldt, 1999; Moya, Expósito, & Ruiz, 2000). Despite the overall importance of the career role, men and women have widely different levels of engagement in careers. Indeed, despite overall equivalence in career salience for men and women, Moya et al. (2000) found that career salience was lower for women with children compared to nulliparous women. The causality of this relationship is not clear, however, as women with greater career salience may tend to opt out of having a family or having a family may ultimately reduce women's career salience. Regardless of the causal path between these observations, it is possible that the majority of women perceive, and later experience, a variety of costs and rewards associated with their mothering and career role choices as well as costs and rewards associated with the timing of engaging in their intended roles. These perceived costs and rewards may shape women's attitudes and, in turn, may shape women's career intentions; moreover, differences in how women evaluate and respond to perceived costs and rewards may explain the discrepancy between the reported salience of careers for women and their actual engagement in careers.

In terms of psychological and attitudinal characteristics, Sax and Bryant (2006) discovered that women who endorsed more liberal values more often selected nontraditional careers. Similarly, women who were more interested in status attainment from a potential career were more likely to pursue sex-atypical careers; however, those who had high degree aspirations were more inclined to pursue sex-role typical careers (i.e., in more feminine fields, such as education, psychology, health). Lalande, Crozier, and Davey (2000) conducted in-depth qualitative interviews about potential influences on career decisions with a sample of 18 young women enrolled in two post-secondary Canadian universities. They found that, at times, women reported that the values relevant to women's career decisions were in opposition: Women described valuing the independence and financial freedom careers offered, and they described valuing their romantic partnerships and—in many cases—future families; however, these relational values were sometimes viewed as being potentially threatened by women's career aspirations. Additionally, women tended to express preferences for careers that could facilitate relational engagement. Lalande et al. (2000) and O'Brien, Friedman, Tipton, and Linn (2000) both found that women expressed greater interest in careers within the social sciences and humanities, and the authors suggested preferences for these fields may arise out of perceived fit with women's attitudinal inclination to value the role of social relationships (i.e., such fields may

enable women to develop relationships with, and meet the needs of, others). Savela and O'Brien (2016), however, suggest that women consider how their future family fits with their career choices and may adjust their career interests to accommodate future family needs.

The potential role of social connections is important to understand as it relates to career decisions not only through women's beliefs about the ways women may anticipate careers facilitating or depreciating social relationships but also through the ways in which particular social figures or groups may influence women's career decisions (i.e., by discouraging or encouraging career pursuits). Unquestionably, members of women's social support networks are important factors to consider in the formation of women's career intentions and their eventual implementation. However, the mechanisms by which social supports influence decisions are still unclear and likely consist of a combination of means. Akande (2009) discovered that perceptions of support were significantly greater for women who pursue careers compared to women who pursue more traditional female roles. Others have found that social support is equally important to men and women, and that increased social support is associated with perceptions of ability to succeed in, and motivation to pursue, their careers (Buday, Stake, & Peterson, 2012). Some have argued that, compared to men, women are innately (or socialized to be) more likely to consider others' needs when making such decisions (O'Brien et al., 2000) and more prone to consulting and being influenced by others (Seymour & Hewitt, 1997).

Akande (2009) suggests that the various sources of social influence that contribute more frequently to the promotion or diminishing of women's career aspirations include family members, educators, and significant males and females. Creamer and Laughlin (2005) noted that young women expressed trust in the opinions of significant social others who they felt would provide advice in line with their best interests. Moreover, many of those who felt social influences were important in contributing to their decisions also described a sense of need for approval from these individuals. Thus, there is a broad range of potential social supports available to women with respect to career decisions.

In terms of family members, parents are important sources of support and modeling. Creamer and Laughlin (2005) completed in-depth interviews with 40 college women; they indicated that the most important social influences in developing their career interests were their parents (i.e., without distinguishing between parents; 65%), followed by siblings or other relatives (e.g., grandparents, aunts, uncles; 33%), teachers and mothers specifically were

reported in equivalent numbers (20%), fathers (13%), and—lastly—counsellors or advisors (8%). Lalande et al. (2000) also found support for the role of mothers, followed by parents without distinguishing mother or father, teachers, friends, co-workers, bosses, mentors, and grandparents, and, lastly, partners. These supports provided counsel and direction that ultimately influenced women's decisions about the type of occupation they pursued. More frequently parents (and mothers in particular) offered this advice.

Clearly, although there are many potential sources of influence, parents may be the most salient. Indeed, other research suggests that mothers are particularly important in shaping the career intentions of daughters. For example, Ex and Janssens (1998) highlight that higher levels of mothers' educations are associated with higher levels of their daughters' educations. Similarly, mother's occupations predict their daughters' college and career decisions, such that the more prestige that is associated with mothers' careers, the more likely young women are to pursue nontraditionally female majors in college (Simpson, 2003). Young women have also frequently described their mothers as important role models for making career (and family) decisions and for believing in their ability to balance multiple roles (Michelson & Velasco, 1998). Yet, women are not simply aspiring to the same types of occupations as their mothers. Instead, more young women are intending to pursue increasingly professional jobs relative to their mothers' work (Michelson & Velasco, 1998). Thus, while parents—and mothers in particular—may be important figures in contributing to women's career intentions and behaviours, other sources of social influence may also contribute.

As noted briefly above, another source of social influence is romantic partners (current or even anticipated). In Lalande et al.'s (2000) study, women indicated that their partners helped to support them—although sometimes less emotionally and more instrumentally—throughout the process of seeking a career. However, women noted that partners could also have a potentially negative influence on women's career decisions too: Women explained that the needs and careers of their partners at times dictated their own education and career decisions.

Creamer and Laughlin (2005) did not include the influence of friends in their list of potential social influences; however, some excerpts from their interviews suggest that this social group may also be important to women's decisions. Sax and Bryant (2006) also investigated men and women's (N = 17,637) career choices and found that they were associated with peer characteristics: Women pursuing careers that were traditionally feminine had peers who

reportedly shared similar values and were more empathic. Although there is a potential selection bias with respect to the friends women choose, wherein women gravitate towards those who are likely to be more supportive and possess characteristics that are aligned more with their career interests and goals, this finding does not negate the potential important contributions of friends and those friends' values on women's career decisions. Lastly, career choices for women may also be influenced by societal expectations. Indeed, women who grow up in more traditional communities also tend to be more traditional in terms of their career intentions and division of labour—a higher proportion of these women tend not to pursue paid employment (Chadwick & Garrett, 1998).

As suggested in the dual-role literature described below, however, women may feel significant pressure to pursue higher standards for their multiple roles than might be unattainable (Campo, 2005; Hart & Kenny, 1997). Indeed, Michelson and Velasco (1998) argue that in envisioning their future careers, young people are "wildly optimistic" (p. 5) about their future career prospects. However, the authors also maintain that over time women tend to downscale their career aspirations as they become more concerned with personal relationships. Previous researchers found the downscaling pattern held true for women in the absence of finding an area of work of particular significance to them or in the absence of finding a mentor who encourages their inquisitiveness and pursuits (Holland & Eisenhart, 1990). In this respect, women's career aspirations appear to be shaped by their interest and by the availability of a social model who promotes the maintenance (or growth) of their career intentions.

Adding to these findings, Lockwood (2006) discovered that the career expectations of young women appear to be positively influenced by exposure to other career women who model success in young women's desired field. However, although same-gender role models are important for women, role-model gender is not an influential factor for men (Lockwood, 2006)—a finding that has been replicated by Barnir, Watson, and Hutchins (2011). The differential importance of role model gender for men and women suggests that even if women identify various role models, successful female role models provide greater inspiration that influences women's expectations for future success. Relatedly, Cassell and Walsh (1997) argue that women's intentions to pursue particular fields of employment may be formed based on what is deemed appropriate for women by social value systems. Yet, Cassell and Walsh argue that cultural and societal attitudes are difficult to change and are important contributors to women's

expectations and experiences of work. Consequently—perhaps because of the persistence of traditional gender role values and expectations in society—the availability of a same-gender role model becomes that much more influential for young women, as these role models demonstrate that their own career success is possible despite potential barriers and consequences of defying conventional societal expectations.

The possible contributions of potential barriers (and facilitators) to women's career intentions are also important to consider. Indeed, Lalande et al. (2000) found women's career intentions were often short-term focused (e.g., graduate, get job, get promotion) and not definite, as women anticipated that there would be changes and compromise throughout their careers. The fluid nature of these decisions and anticipation of changes suggests that women are aware of a number of potential barriers that may necessitate altering of their career intentions. To that end, researchers have attempted to identify the various potential barriers to, and facilitators of, women's engagement in intended careers.

A significant amount of research has examined self-efficacy as it relates to career decision-making and the formation of intentions. Bandura's (1977, 1986) theory of self-efficacy posits that self-efficacy beliefs or expectations mediate behaviour and behavioural change. Career self-efficacy, according to Betz and colleagues (Betz & Hackett, 1981; Taylor & Betz, 1983), is primarily the result of socialization, and it encapsulates individuals' beliefs about their own capabilities with respect to achieving the tasks required to realize their career intentions. As such, self-efficacy includes not only expectations of personal efficacy, but also how people respond to—or expect to manage—factors that may be perceived as hindrances as well as factors that may be perceived as facilitators of their intended behaviours. In this way, internal (psychological) and external (sociological) barriers impact women's career decisions. These barriers can include beliefs about the self (e.g., competency) and beliefs about potential events or circumstances (e.g., discrimination, lack of finances) and their ability to manage these situations. Career self-efficacy has been repeatedly established as a predictor of academic behaviours (e.g., performance and persistence) and career intentions and behaviours (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001; Betz, Klein, & Taylor, 1996; Betz, & Voyten, 1997; Hackett & Betz, 1981). For example, Betz et al. (1996) and Betz and Voyten (1997) found that career indecision was more common in individuals who had low self-efficacy about their career decision-making skills.

A variety of additional barriers have been identified in the literature. For instance, Buckham (1998) reported that both men and women in undergraduate studies express concerns about the availability of jobs and this concern influences their career expectations and intentions. Concerns about financial stability have been shown to predict women's career choices, such that greater financial concerns are associated with more traditionally feminine career choices (Sax & Bryant, 2006). Further, once employed, there are additional barriers that can impact careers, and it is possible that young women are aware of and, therefore anticipate, these barriers when making their career decisions. For example, women's anticipation of various professional demands, (in)flexibility of the workplace, and lack of available childcare (Bacik & Drew, 2006) may all act as barriers to careers and contributing to opting out of careers.

Through questionnaires and group interviews, Tinklin, Croxford, Ducklin, and Frame (2005) studied beliefs related to career and parenting roles in a sample of 14 to 16-year-old youth (N = 190). Both sexes expressed beliefs in equality between genders in terms of the opportunities available to them to achieve good qualifications through schooling, to have meaningful careers, and to share in the care of children. They expressed beliefs that women are able to choose any occupation they desire, but they also expressed awareness of the realities of inequalities in domestic and work spheres (e.g., through observation in their families of origin). Moreover, their beliefs in the variety of options available to both men and women were not reflected in their personal career aspirations, which were more traditionally gendered. These findings suggest that—despite perceptions of equal opportunities—youth anticipate potential barriers to women's achievement of careers and are aware of the realities of unequal domestic engagement. As a result, their choices are ultimately aligned with more traditional social expectations for 'appropriate' careers for men and women. Consequently, it appears that while youth may express beliefs supporting the ideals of equal opportunity for men and women in their career choices, those same youths do not plan to act on the equal opportunities they espouse themselves.

Although many women have been employed in the workforce throughout the ages out of necessity, the 20th and 21st centuries have seen the greatest rise in women's workforce participation. No longer relegated to menial or unskilled labour, these centuries have borne the career woman who is able to choose to pursue employment for personal fulfillment and who is able to participate equally with men in highly specialized occupations. However, there are still constraints on these career women and the choices they perceive available to them when making

decisions. Women's paid work engagement is not universal: as many as 41.7% of women were not employed in the paid workforce in 2009 (Ferrao, 2010). Yet, the focus of many studies on women's career decisions is about the type of occupations they are choosing, implying a basic underlying assumption that all women are choosing careers or at least would if it were not for conflicting roles. However, the general disinterest in or neglect of research that aims to understand the differences in psychological, sociological, and situational factors that distinguish career women from women who do not choose to pursue paid work feeds into the perception that women's careers are now compulsory. As such, the literature neglects the fact that many women—around four in ten—are not engaged in paid work and this may occur for any variety of reasons, of which multiple role conflict may be just one. To that end, in Canada only 7.5% fewer women with children under age 16 were employed in paid work than women without young dependents (Ferrao, 2010). Clearly, although women without children continue to participate slightly more in educational and career pursuits than their parenting counterparts (Ferrao, 2010; Turcotte, 2011), engagement in education and career domains is not limited to childfree women. Increasingly more women are seeking to simultaneously engage in multiple roles beyond the domestic sphere, suggesting reasons for opting-out of careers for a large number of women may be much more complex than parental status.

1.6 Dual Dueling Roles: The Age of Superwoman

Although older maternal age may be increasingly acceptable, and although acceptance of childlessness is increasing, attitudes towards childlessness may still be negative (Koropeckyj-Cox & Pendell, 2007): Childless women and couples have been (Greil, 1991) and continue to be (Graham & Rich, 2012; Kelly, 2009; Koropeckyj-Cox, Romano, & Moras, 2007; Park, 2002) negatively stereotyped and considered abnormal and deviant. Negative attitudes towards childlessness tend to be more predominant in individuals who are older, male, less educated, and religiously conservative (Koropeckyj-Cox & Pendell, 2007). Moreover, Koropeckyj-Cox and Pendell argue attitudes towards childlessness have not become increasingly positive so much as they have become less negative (and more neutral). Despite the shift towards greater personal development as well as shifts towards the need for greater educational and professional career attainment for women, motherhood has traditionally been—and remains to be—considered an imperative role. In the past, women who choose not to pursue motherhood were considered selfish and unfeminine (Callan, 1983). The stigma of childlessness has changed little since

Callan's (1983) research: Negative representations of childless women predominate in modern print media (Graham & Rich, 2012). Indeed, motherhood and femininity are fundamentally synonymous in most cultures; consequently, motherhood is often central to women's identity (Remennick, 2000).

Pressure to pursue motherhood is ever-present in the lives of most women; yet, greater educational and employment opportunities have also helped women to broaden their potential identities outside of the traditional confines of mothering, marital, and familial roles. Further, as egalitarian views increase, women aspire to increasingly greater levels of educational and career attainment (Colaner & Warner, 2005), which may provide support for Schoeder, Blood, and Maluso's (1992) much earlier finding that increasingly egalitarian women feel their identities are less fixed to domestic roles of mother and spouse. The persistence of the motherhood imperative in conjunction with the growing emphasis on education and careers for women may contribute to conflicting psychological demands: the desire to pursue a career and the desire to uphold the traditional role of ultimate femininity through motherhood. As such, women may now find themselves torn between the roles of professional and of care provider.

The more roles individuals assume the more challenging it is to manage the responsibilities of those roles (Aaron-Corbin, 1999). Interestingly, although the successful implementation and management of these multiple roles may be largely at odds, in some ways it is the very pursuit of certain nontraditional roles that can facilitate greater realization of 'opposing' roles. For example, although educational attainment may produce greater opportunity for career engagement, it also facilitates women's ability to realize their fertility intentions (Spéder & Kapitány, 2009). That is, education provides women with greater income opportunities (Miller, 2011), which may mitigate the financial costs of bearing children. Indeed, women who have lower incomes or are unemployed are less likely to express plans to bear children (Modena & Sabatini, 2012). Similarly, expressed fertility intentions decrease for individuals with lower levels of income, but this is only true for intended childbirths; women with lower levels of education are likely to experience a greater number of unintended childbirths (Spéder & Kapitány, 2009). However, higher levels of education and greater career intentions may also cause some women to postpone childbearing even longer to ensure they establish themselves in their careers and until they perceive that taking leave from work for parenthood may be potentially less damaging to their careers (Gustafsson, 2001; Gustafsson &

Worku, 2005; Kravdal, 1994). Even though educated women also express intentions to have more children than the current replacement value of 2.1, the achieved number is often much lower (Liefbroer, 2009). Moreover, employment can impact family size: Park (2012) found a reduction in the number of intended children for employed women.

Women who postpone motherhood tend to make more money during their nulliparous years as well as the years following the birth(s) of their children (Miller, 2011). Specifically, Miller found that, relative to women who have children earlier in life, women who defer motherhood in pursuit of education and professional or managerial careers have an increase of 4 to 10% in earnings for every year of deferred motherhood as well as higher earnings in the working years after the birth of children. Van Bavel (2010) also found women who postponed mothering increased earnings both in terms of their starting wage and the steepness of increases over the course of their careers. However, higher earnings for mothers who have children after first engaging in their careers is also associated with greater amounts of time spent at work compared to women who have children earlier in life (i.e., prior to their career). Each choice has associated trade-offs: Women who become mothers earlier in life may make significantly less money overall, but they also report having more leisure and home time (Miller, 2011). Nevertheless, McQuillan et al. (2008) argue women who are already mothers do not view valuing work success as diametrically opposed to valuing motherhood, but this perspective is not shared by nulliparous career women who have chosen to be childfree or who have yet to act upon mothering intentions. Given the potential perceived trade-offs, role decisions may involve a complex consideration of women's—potentially juxtaposed—values as they relate to each role.

The centrality of the career and mothering role conflict for women is highlighted by research investigating the impact of social family policies on fertility rates. Changes to social policies in some countries have attempted to address the direct costs of children (e.g., monetary expenditures related to having children) and the indirect costs of having children (e.g., lost earnings, impact on career trajectory). Risse (2010) examined Australia data from 2001 to 2008 and Langdridge, Nassar, Li, Jacoby, and Stanley (2012) examined Australia data from 2004 to 2006 following the country's 2004 financial incentive policy aimed at boosting fertility rates. In both studies, the authors found there was an increase in achieved fertility in the years that followed the implementation of the policy. Langdridge et al., however, also found that the greatest growth in fertility rates occurred for women with the highest socioeconomic status,

education, and skilled-occupation employment. This group of professional women previously had the lowest fertility rates, suggesting that the alleviation of the financial cost of childrearing is most salient for higher income women who are more highly educated and engaged in more skilled occupations. However, in examining the policies of various countries, Kalwij (2010) found that women overall were less concerned with the financial costs of childbearing, as evidenced by countries having no significant changes in fertility rates associated with increased financial incentives for parenting. Rather, women expressed more concern about the opportunity costs of having children: Countries that promoted family-friendly policies that impacted the career domain (e.g., parental leave and childcare) were associated with increases in fertility rates. Nevertheless, although they are incentivizing at some level, social policies cannot subsidize all of the potential career-related costs of parenting and parenting-related costs of careers, such as a potential reduction in prospects for social relationships, mental stimulation and challenge, employment skill development or training as well as the potential of missing childhood milestones, the loss of time spent bonding with offspring, and the energy required to provide care and fuel children's healthy development.

Role choices pose various challenges for women and may produce some additional, unintended, negative consequences in various other role domains (e.g., the roles of employee, spouse, child, friend/peer). For example, for some couples, having children continues to be a primary ideology of marriage (Day, 2005). Women, who later have difficulties conceiving, also tend to report being blamed by parents for prioritizing work and delaying childbearing (Imeson & McMurray, 1996). Taken together with research suggesting some purposes of bearing children are to fulfill a role as a *good* partner and to fulfill the role of a *good* daughter or sister (e.g., by providing their family members with children/grandchildren/nieces/nephews and by continuing the family line), it seems that in cases where women's ability to conceive may be compromised by other competing role decisions—such as education or career—women may not only be viewed more generally by their social referents as failures in the role of mothering, but also as failures in their other roles—that of partner and daughter (or sister). The same can be argued for career women who choose to parent. Such women may be evaluated poorly by their work organizations as a result of being viewed as unable to meet work-related demands due to familial obligations, and this is particularly true for more highly educated women who are employed in professional fields—fields that are generally associated with higher levels of expected work

hours (Cha, 2010). Even for women who are considered highly successful in both roles as mothers and career women, there are social costs. They are seen as less likable, less warm, and more hostile than similarly successful career women who are not mothers (Benard & Correll, 2010). Moreover, this discrimination is promoted only by other women (Benard & Correll), suggesting that career and mothering oriented women are most in danger of failing to meet other women's expectations of their personal characteristics.

Ultimately, the expansion and availability of role choices for women can be a multi-edged sword—and no decision is without its own negative consequences. Women who choose to pursue motherhood without a career may be viewed as nurturing but incompetent (Etaugh & Poertner, 1992; Fiske, Cuddy, Glick, & Xi, 2002), as 'breeders' who do not lead worthwhile lives, and as women who perpetuate anti-feminist gender stereotypes (Miller & Ponnuru, 2001). Women who choose to pursue a career and be childfree may be viewed as not only unfeminine but also masculine (Rudman & Glick, 1999) and uncaring (Campos, 2005). Women who choose to pursue both mothering and a career may be viewed as less committed and/or incompetent in both roles (Bridges & Etaugh, 1995; Williams et al., 2006).

Research on young women's anticipation of life roles suggests the dual- or multi-role path is perceived as highly desirable. Some previous researchers have found that those with higher career aspirations tend to also express greater aspirations towards more orthodox motherhood (Cook, 1993; Schroeder et al., 1992). McDonald, Pini, Bailey, and Price (2011) found that about half of the young girls, ages 14-16 years old, in their sample expressed expectations of future independent careers and being the primary caregiver in their family role, suggesting that when it comes to these life roles many young women want (or simply expect) to have it all. The myth of 'having it all' has perpetuated the belief that women could pursue careers without compromising their roles as mothers and partners in any way (Campo, 2005). Campo argues the focus of this shift towards careers, however, has been solely on the expansion of roles for women without expectations for simultaneous changes in men's roles. As such, striving for the mother-lover-career woman role trifecta has meant adding expectations in new role domains without the lessening of expectations in others. Indeed, consistent with Cook (1993), McDonald et al. (2011), and Schroeder et al. (1992), Heaton and Jacobson (1999) ascertained that anticipation of potential workload and the expected time and energy necessary for engaging in a

career did not predict women's reproductive choices: The majority of women chose to pursue multiple roles regardless of whether or not they anticipated career-related overload.

With the expansion of life roles, and the desire to pursue all roles without compromises or the relinquishing of others, came the birth of the superwoman ideal. Arguably, this ideal rapidly became the superwoman 'syndrome' (Hansen Shaevitz, 1984)—a disease caused by excessive attempts to simultaneously manage the demands of multiple roles. As superwomen, working mothers were (and are) expected to not only 'have it all*'* but were (and are) also expected to 'want it all' (Campo, 2005). *And,* these superwomen are expected to be perfect in all domains—partner, mother, and employee/employer/student (Nicolson, 2002). The well-intentioned quest to define women beyond the confines of domesticity by expanding women's roles into the workforce has served to create only higher standards for achievement for women who are now 'doing it all.' These perpetually high expectations are superwoman's kryptonite.

For those women who pursue domestic and career roles, women—and society more broadly—have set an impossibly high level of expectations to attain. Nevertheless, over the past four decades there have been slow societal shifts towards the kind of supports (e.g., shifting spousal gender-role attitudes *and* behaviours in the home, in governmental and organizational family policies) potentially necessary to facilitate women's successful engagement in dual mothering and career roles (McDonald, 2000; Risse, 2010). However, societal pressure for women to pursue multiple roles has increased so dramatically that women who choose to pursue only the role of mother *or* career woman are also stigmatized (Miller & Ponnuru, 2001; Rudman & Glick, 1999). Moreover, women themselves have contributed to the broader societal perception that failure constitutes anything less than perfection in all roles (Nicolson, 2002). To add further pressure, women are expected to succeed in this manner while finding a way to be simultaneously personally happy and satisfied (Rottenberg, 2014). Although women may have more doors open to them, each door poses its own risks and all doors lead to the same destination: Regardless of what decision they make, women's choices may contribute to stigma, perceptions of personal failure, or role conflict and dissatisfaction or regret about paths not taken.

1.7 Work-Family Conflict

Conflicting demands between parenthood and career roles may contribute to the experience of work-family conflict following the birth of children. Work-family conflict (WFC) occurs when these two roles are incompatible to some degree. This role conflict appears to be a

salient issue for women, particularly in light of generally imbalanced engagement in domestic roles. Indeed, women are much more likely than men to yield to family demands when work and family roles conflict (Beaujot, 2000; Bracken, Allen, & Dean, 2006). The relationship between the experience of WFC and negative psychological outcomes is well documented (Hock & DeMeis, 1990; Kinnunen & Mauno, 2008; Lee, Zvonkovic, & Crawford, 2014; Lu, Gilmour, Kao, & Huang, 2005). For example, van Daalen, Willemsen, and Sanders (2006) found that many working parents, particularly women, report greater stress and feeling *overloaded*—that is, feeling that the total time and energy demands of multiple roles exceed one's ability to perform the roles effectively or comfortably (Duxbury et al., 1994). Moreover, Allen, Herst, Bruck, and Sutton (2000) conducted a meta-analysis of WFC outcomes and found that greater WFC is associated with increased general psychological strain, burnout, job turnover, and depression as well as job, marital, and life dissatisfaction. WFC is an important factor in considering parental subjective wellbeing: Matysiak, Mencarini, and Vignoli (2016) found work-family conflict acts as a moderator for parental wellbeing such that parents with higher WFC report lower levels of subjective wellbeing. Moreover, Matysiak et al. found that wellbeing—for mothers in particular—was negatively impacted *only* when they also have higher WFC.

A plethora of research has focused on how work interferes with family roles. However, Allen et al. (2000) contend that it is important to note WFC is not unidirectional: Work can interfere with family and family can interfere with work. As such, some researchers have investigated how the family role interferes with one's career role (e.g., Kemkes-Grottenhaler, 2003; Ng & Feldman, 2012). The vast majority of the housework and childcare duties are still seen as women's responsibilities, even when women are engaged in their careers full-time as well (Hochschild & Machung, 2003; Stone, 2007). WFC arising from competing demands is also more likely to be resolved by changes in women's career functioning. For example, Cha (2010) discovered that in dual-career partnerships, when their partners work over the typical full-time workweek, women are more likely to leave work to care for children and to reduce role conflict; however, the same is not true when women are the ones who are working more than the typical workweek—their partners' odds of quitting remain the same, suggesting that if any work-family accommodations are going to be made, those compromises will be made by working women.

Benard and Correll (2010) noted that the conflict between mothering and work roles results in penalties for women in the career domain. Examples of such penalties include being

viewed as less competent and committed in their work roles. Indeed, such concerns are not new to today's working mothers: Twenty years ago, Cassell and Walsh (1997) found that women were very aware of the potential impact of family on work and that, for some, it led to active efforts to avoid reference to their family lives at work so others would not perceive them as having alternative priorities that could bias coworkers' and bosses' opinions of them.

The experience of WFC, however, may not be limited to parents but may also be experienced or anticipated by individuals in the process of making parenting and career decisions. As such, anticipated WFC has the potential to impact women's fertility and career decisions. With respect to fertility intentions, Huinink and Kohli (2014) emphasize the role of not only past experiences in intentions but also the role of anticipation of future experiences, including anticipation of whether or not young adults feel they will be able to successfully engage in the responsibilities of multiple roles or anticipate failure within all domains. Not surprisingly, in other studies examining the decision-making of childless young adults, individuals have reported feeling significant conflict between their future work and family roles (Liefbroer, 2005; Novack & Novack, 1996).

In one study, 70% of women who had obtained master or doctoral degrees and had chosen to temporarily postpone parenthood reported anticipating conflict and feeling that it was easier for men to balance career and family roles (Kemkes-Grottenhaler, 2003). Koropeckyj-Cox and Pendell (2007) found that the costs of parenthood are perceived as most severe for women with higher levels of education. Relative to men, more women in postgraduate studies also reported anticipating greater difficulties with balancing their work and their family lives (Svanberg et al., 2006). In spite of women's and men's endorsement of equalitarian views, Lampic et al. (2006) argue that young female university students are significantly more concerned than their male counterparts about potential WFC and combining roles. That is, concerns about possible future work-family balance are most strongly associated with the parenting and career intentions of young women. Given past research, it is reasonable to suspect that anticipated WFC is a more prominent concern for women who intend to pursue both mothering and career roles, as opposed to women who may intend to pursue only one role.

1.8 Gender Roles & (In)Equality

Traditional gender role traits, attitudes, and behaviours also contribute to our understanding of role intentions and salience. Changes in secularization (Lesthaeghe, 2015),

along with the aforementioned changes in parenting and career patterns of women, have occurred in the context of a corresponding shift in endorsement in nontraditional gender-role traits for many young adults (Judge & Livingston, 2008; Yaremko & Lawson, 2004). Not only are women increasingly endorsing more masculine or instrumental traits while also maintaining feminine or expressive traits, but men are also endorsing more feminine or expressive traits (Judge & Livingston, 2008). Such changes in gender traits and possible gender role attitudes and behaviours have the potential to influence women's reproductive and career decision-making. For example, men's increased engagement in family roles (e.g., household chores, child care), which is increasingly likely for those who have more expressive traits (Erickson, 2005), is associated with an increased likelihood of women choosing to have more than one child—even if these men's domestic engagement is limited to only weekends (Park, 2012).

The extent to which one identifies with particular gender-role traits and attitudes related to gender roles may predict future role intentions. Kaufman (2000) described women who expressed more traditional gender-role attitudes as also tending to express beliefs that it is the man's duty to work and that children are essential to fulfilling women's roles. Traditional gender-role attitudes have been found to predict lower career role salience for women (Moya et al., 2000). Although Colaner and Warner (2005) found that women who expressed more traditional gender-role attitudes anticipate working in paid employment, they also found that women with more traditional gender-role attitudes expressed lower career aspirations, preferring not to pursue advanced graduate degrees or leadership positions. In contrast, women who express greater nontraditional gender-role attitudes reported higher levels of career orientation.

Elaborating further upon facets of gender roles and role intentions, Kerpelman and Schvanevedlt (1999) examined the relationships between gender traits, gender-role attitudes, role salience, and anticipated role engagement in a large sample (N = 1,267) of never married, childfree, young adults. Compared to women who reported greater family-role salience, women who were career oriented (i.e., greater career salience) or who reported dual-role orientations (i.e., equal career and family/marriage salience) tended to be the least traditional in terms of gender *attitudes.* Career-oriented women also differed in their gender-role *attributes*: Those who had higher career salience also reported fewer expressive traits than their family and their dual-role oriented counterparts. However, career-oriented women did not differ in terms of

instrumental traits—all women endorsed equivalent levels of instrumental attributes, regardless of role salience.

Kerpelman and Schvaneveldt (1999) also compared gender-role attitudes and traits between women and men. Regardless of their role salience, all men were lower in expressive traits than women who reported dual-role (i.e., family and career) salience or only family-role salience; however, they did not differ from women who reported high career-role salience. Although men have described themselves in some studies as higher in instrumental and lower in expressive traits than women (Kerpelman & Schvaneveldt, 1999), to some degree, men have arguably become increasingly less traditional, expressing a greater degree of traditionally feminine traits (Judge & Livingston, 2008; Yaremko & Lawson, 2004). Moreover, according to gender construction theory, the more individuals identify with expressive and feminine traits, the more they are likely to engage more domestic work (Erickson, 2005). Indeed, by the end of the 20th century, men still tended to possess more traditional gender-role attitudes than women (Kerpelman & Schvaneveldt, 1999) and men and women both perceived most men and most women as primarily adhering to gender stereotypes (Auster & Ohm, 2000). The trends in changing gender-role attitudes have undergone many shifts: Throughout the 1980s to mid-1990s, egalitarian views steadily increased (Cotter, Hermsen, & Vanneman, 2011); however, Cotter et al. (2011) also note that their data, spanning from 1977 to 2008, show a reversal of egalitarian views between 1994 and 2000. Since 2000, the authors note that there has been only a slight and much decelerated rebound in liberal gender-role attitudes.

Gender roles are learned within various social systems: Family, peers, and society reinforce development of, and adherence to, these gendered roles. Eagly's (1987) social role theory proposes that social roles encourage men and women to embrace differently particular traits and behaviours that are gender stratified—that is, gender traits and behaviours that are viewed as socially appropriate and corresponding to the sexes. Changing roles and associated behaviours of men and women have also contributed to changing expressions of gender-role traits, such that more men endorse traditionally feminine traits and more women endorse traditionally masculine traits (Judge & Livingston, 2008; Twenge, 1997; Yaremko & Lawson, 2004). However, despite meta-analytic data indicating that both women's (to a greater degree) and men's (to a lesser degree) gender-role traits are less traditional than in the past (Twenge, 1997), the actual practice of such shared role responsibilities—while certainly changing—has not

been observed in equal measure to the rate of adoption of more androgynous gender traits (Craig, 2007; Johnson & Johnson, 2008). Indeed, more so than young men, young women still anticipate that the parental role will entail greater costs (Yaremko & Lawson, 2004). It appears that the progressive changes in gender roles has been much more apparent in education and employment settings, while the family setting is still dominated by more traditional breadwinning husband and domestic wife gender-role attitudes (McDonald, 2000).

Gender-role traits and behaviours, and social role theory, have the potential to contribute to our understanding of women's role intentions. Kaufman (2000) asserts that motherhood tends to be central to the identities of traditional gender-role (i.e., feminine) women, whereas motherhood is viewed as only one facet of the identities and lives of egalitarian gender-role women. To that end, egalitarian women have been found to express lower fertility intentions than more traditional women (Golmakani, Fazeli, Taghipour, & Shakeri, 2015). Indeed, Kaufman (2000) reported that the odds of expressing intentions to have a child declined by 26% for each one-point increase in egalitarian attitudes and these intentions were reflected in their actual reproductive behaviours over a 5-year period. Overall, women who were more egalitarian were also more likely to choose to be childfree.

Gender-role traits may be related to women's mothering- and career-related attitudes. Although Seccombe (1991) found that the perceived cost and benefits of mothering were not influenced by women's gender-role orientation, others have found support for the relationship between gender-role attributes and gender-role attitudes and attitudes towards mothering. Bernhardt and Goldscheider (2006) examined parenting attitudes and gender-role attitudes in a large sample (N = 1,560) of young Swedish men and women 22 to 30 years of age. Overall, both men and women expressed more positive attitudes (more perceived benefits) than negative attitudes (fewer perceived costs), but egalitarian men perceived fewer costs than traditional men. Egalitarian women expressed attitudes that reflected greater perceived costs and lower perceived benefits of motherhood than women with more traditional gender-role attitudes. Moreover, the perceived benefits were lower for egalitarian women than egalitarian men.

Yaremko and Lawson (2007) also examined the relationships between gender-role traits and parenting expectations, intentions, and role salience in a sample of men and women (N = 233) enrolled in university. The authors used the Bem Sex Role Inventory to assess feminine and masculine gender traits and Lawson's (2004) Perceptions of Parenting Inventory to assess

parenting expectations. Compared to men, women expressed more parenting-role salience, greater intentions to pursue parenting, and more positive expectations about parenting. Although masculinity was not associated with parental-role salience and parenting intentions, feminine traits were. However, higher feminine traits were only associated with the overall parenting expectations of men and not the overall parenting expectations of women. Contrary to Bernhardt and Goldscheider's (2006) findings, Yaremko and Lawson's (2007) further analyses of specific parenting expectations revealed that, although men anticipated fewer, women anticipated greater instrumental costs to parenting—however, this was not analyzed for differences while also considering men and women's gender-role attitudes. Nevertheless, the disparity between men and women in Yaremko and Lawson's (2007) evaluations of perceived instrumental costs associated with parenting suggests that both genders expected women would be more involved in the care of children.

Despite some significant changes in terms of gender roles and acceptance of more varied engagement in domestic and nondomestic roles since the 1970s (Bolzendahl & Myers, 2004; Carter, Corra, & Carter, 2009; Tinklin et al., 2005), the trend towards increasingly liberal gender attitudes has started to slow down (Bolzendahl & Myers, 2004). Negative stereotypic assumptions and stigma continues to exist for those individuals who do not conform to traditional gender roles out of desire for the personal fulfillment that nontraditional gender roles may offer (Young & Hurlic, 2007). To that end, Brescoll and Uhlmann (2005) found that, for both men and women, nontraditional parents were viewed less positively than traditional parents. Overall, individuals expressed greater dislike for stay-at-home fathers and dislike for employed mothers, particularly when working mothers were described as working for personal fulfillment as opposed to financial necessity.

Gender-role traits may also interact with education and intended field of study (and eventual work) to predict mothering-role intentions. Martín-García and Baizán (2006) discovered that, although education level was still important to mothering intentions, areas of study that arguably require more expressive traits (e.g., those that involve caring for others or emphasize interpersonal exchanges) predicted positive childbearing intentions. This finding provides another possible explanation for the aforementioned finding that higher education is positively correlated with fertility intentions (e.g., Spéder & Kapitány, 2009). Specifically, it may be that women who are choosing to pursue education and careers are choosing fields that are more

aligned with traditional gender-role traits and fields that may be more conducive to, or accepting of, the mothering role.

Given the relationship between gender traits and education pursuits and the relationship between education and careers, it is reasonable to expect that gender-role characteristics may contribute to aspects of women's career intentions as well. Clugh and Sahgal (2007) argue that society values more traditionally masculine characteristics in careers to a greater degree than traditionally feminine characteristics. Traits—such as rational decision-making, emotional stability, ambition, leadership, assertiveness—tend to be associated with perceptions of competency in career roles. Men and women who espouse higher levels of nontraditionally-gendered traits tend to have greater career aspirations and greater engagement in the workforce (Bolzendahl & Myers, 2004; Powell, Butterfield, & Parent, 2002). Similarly, those who want to be entrepreneurs perceive themselves as having higher levels of male characteristics, and the more they identify with male characteristics, the greater their entrepreneurial intentions are (Gupta, Turban, Wasti, & Skidar, 2009). In contrast, Gupta et al. (2009) found there is no effect—neither positive nor negative—on entrepreneurial intentions for traditionally feminine characteristics.

Potentially relevant role models, such as mothers and fathers, may contribute to the development of women's gender-role traits and their career and mothering intentions. Goodnow (1992) argues that parents' views best predict the views of their children. Ex and Janssen (1998) reported that the gender-role attitudes of mothers predict gender-role attitudes of daughters, which in turn were related to daughters' attitudes towards motherhood. As noted above, Barber (2000) found that mothers' own leanings towards traditional stay-at-home mother roles predict their daughters' timing of motherhood. In contrast, women whose mothers worked are less likely to identify with traditional sex-role orientations (Witt, 1997).

A distinction, however, must be made between gender-role traits, attitudes, and behaviours. Although women who may possess nontraditional gender-role traits are more prone to nontraditional gender-role attitudes (Kerpelman & Schvanevedlt, 1999), some women may identify with androgynous traits while also maintaining attitudes that subscribe to traditional gender roles. Further, changes in gender-role attitudes and traits do not always translate into changes in the division of labour, which continues to remain gendered. Dempsey (2000) found that for men, childcare was most often considered optional. Fathers in Dempsey's sample were

twice as likely, compared to mothers, to not participate in childcare tasks, and only 5% of couples equally shared in childcare. Kaufman (2000) reported that egalitarian women expressed greater interest in careers and less interest in spending time engaged in childcare, but these women also held lower expectations of receiving support from men in the domestic realm.

Research indicates women are not anticipating unrealistic division of labour practices. Smithson (1999) found that, although many young adults endorsed equalitarian views regarding the division of household and parenting labour between partners, the egalitarian values that these young adults expressed were not consistent with their personal expectations for the division of childcare duties in their own relationships. More of these women than men anticipated engaging in traditionally gendered future roles (i.e., having greater involvement in household and childcare roles). Similarly, Fulcher and Coyle (2011) argue that disproportionately more young men continue to expect to be breadwinners and more young women continue expect to be stay-at-home mothers. Researchers (e.g., Matud, Bethencourt-Pére, & Ibáñez, 2014; Riggs, 1997, 2005) have also found that traditional gender-role beliefs appear to be persistent: Men and women have expressed greater adherence to and approval for traditional gender roles and expressed greater life satisfaction when they adhere to traditional gender roles. Finally, greater anticipated traditional-gender role engagement in the home atmosphere appears to be an accurate reflection of actual practices, regardless of other-role engagement: Common division of labour stereotypes also hold true for professional couples with children (Kemkes-Grottenhaler, 2003).

Taken together the results of these studies suggest that, despite indications that the number of women and men who are expressing androgynous traits and egalitarian ideals is increasing, anticipated behaviours are not aligning with nontraditional values and overall social approval is still greater for traditionally defined roles. Consequently, despite some shifts in expressed gender-role traits and expectations and despite some prospects that may enable more egalitarian women to opt into childfree lives, many women still anticipate donning the superwoman tights and cape without seeking or receiving the support of their spousal sidekicks.

1.9 Theoretical Approaches to Mothering and Career Intentions

Various approaches, both atheoretical and theoretical, have been applied in an attempt to better understand mothering and career decisions and to account for postponed parenthood, declining fertility, and the—ever-increasing—career engagement patterns described above. Approaches to understanding fertility intentions have changed over time from focusing on

demographic and biological determinants of fertility, to accounting for economic, sociological, cultural, and psychological processes (Santangelo, 2011). The approach to understanding career intentions has similarly progressed from basic demographic considerations to include broader sociological, cultural, and psychological processes. However, based on their review of the literature and meta-analysis, Konrad et al. (2000) conclude that most studies of career decision-making are atheoretical. They state that applying theory to better understand potential causal links between variables that may be involved in career decisions is an essential next step for the field. Since that time, few theoretically-driven career decision-making studies have emerged.

The theoretical approaches applied to mothering and career intentions have ranged from novel to well-established theories. The implementation of theoretical approaches to understanding role intentions has similarly varied from a priori applications of theory that helps to guide study design to attempts to explain findings using post-hoc applications of theory and interpreting loosely-related variables that are poor proxies for appropriately measured theoretical constructs. Some of these theoretical approaches are briefly summarized below.

1.9.1 Evolutionary perspectives.

Some have proposed that decisions to parent are propelled by evolutionary drives to reproduce. Arguably, seeking a career also would fit within an evolutionary perspective, such that by seeking a more lucrative profession the needs of one's self and family are better met and, therefore, one's genes are more likely to survive. Along those lines, Wisman and Goldenberg (2005) examined fertility patterns in reaction to mortality threats. In the wake of the 911 terrorist attacks, the authors found events that bring the importance or salience of mortality to the forefront of individuals' awareness are associated with increased desire for children. However, the effect was moderated by desires for careers for women but not for men: In response to mortality salience, career importance increased more than mothering importance for women who expressed high career salience. Although this study highlights the importance of situational/environmental variables in understanding intentions and behaviours, men and women continue to make parenting decisions inconsistent with evolutionary drives (i.e., regardless of confronting events that might highlight the fragile nature of their mortality).

1.9.2 Microeconomic perspectives.

With strong influences from economic studies, Homans (1958) proposed social exchange theory, which attempts to understand exchanges between persons by presuming that such

interactions are the result of rational decision-making that considers the costs and rewards of those exchanges. Over time this microeconomics exchange theory has been adapted to apply to individual decision-making. That is, the theory posits that the choices people make are the result of rational decision-making that assesses perceived costs and benefits of various options (White & Kim, 1987). Indeed, some researchers (e.g., Montgomery & Casterline, 1996) have attempted to understand mothering and career intentions using a cost-benefit analysis or rational choice approach, in which it is theorized that women and men deliberately contemplate the economic and psychological rewards and consequences of parenting and/or careers and make their choices depending on which option (i.e., parenting, being childfree, pursuing a career) is perceived as more rewarding.

Montgomery and Casterline (1996) argued that exchange theory may also help to understand decision-making as a process that changes over time—that is, changing decisions as different costs and rewards may be encountered. For example, a young woman may make the decision to pursue a career and become a mother prior to pursuing an education, weighing at that time the perceived costs and rewards associated with each role, but as she completes university and/or encounters different career opportunities, the perceived costs of childrearing may begin to outweigh the perceived rewards. However, this example also highlights one shortcoming of microeconomics approach: Individuals are often making decisions in the face of ambiguity and uncertainty as not all options and outcomes may be known (Montgomery & Casterline, 1996), and this may preclude people from being able to fully assess the costs-reward ratio. Moreover, uncertainty and people's innate risk-aversion may lead women to evaluate such options more negatively (Hsu, Bhatt, Adolphs, Tranel, & Camerer, 2005; Kahneman, 2011; Montgomery & Casterline, 1996).

A second shortcoming of this approach to understanding decision-making relies on the presumption that decisions—about careers and childbearing—are made rationally, without undue impact from particularly salient emotional or social influences. The context in which decisions are made is important to consider, given that—as noted above—the personal feelings and beliefs, familial supports and their availability, cultural philosophies, and social policies can all contribute to decisions people make; moreover, consideration of such factors may better account for decisions that do not appear to be consistent with what might be predicted by using a purely "rational" cost-benefit approach.

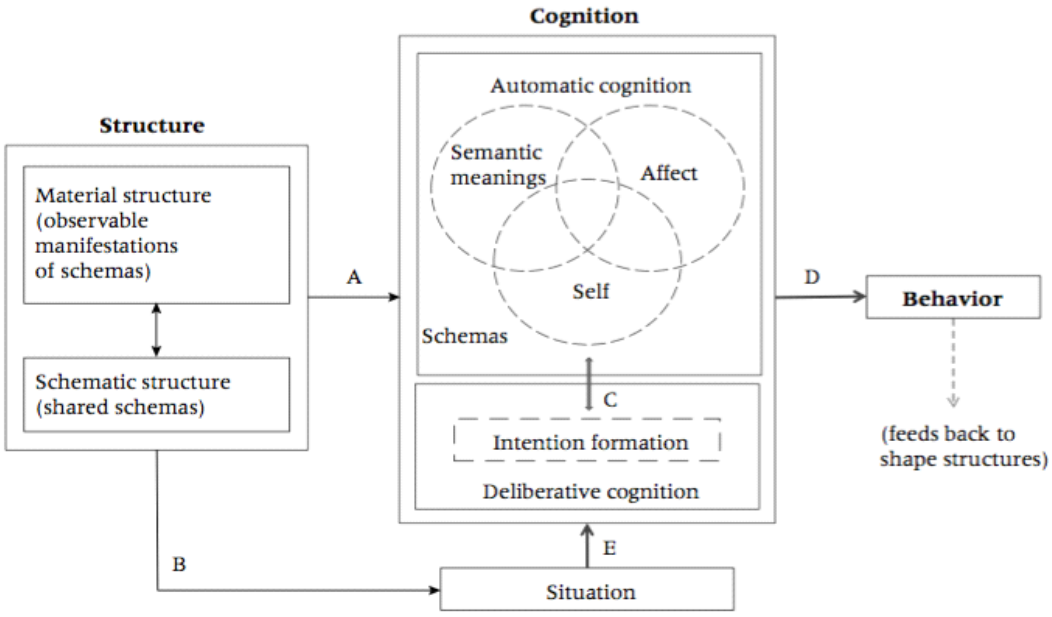
1.9.3 Social psychological perspectives.

Our decisions are not made in the absence of relationships and society, which can shape our beliefs about and attitudes towards particular outcomes. Although Bernardi and Klärner (2014) focused on fertility decisions, their findings are arguably equally applicable to career decisions. Specifically, Bernardi and Klärner—using a social network framework—argue that individuals' fertility beliefs and behaviours are moderated by social interactions and structures. Further, they suggest that social learning, pressure, contagion, and resource exchanges all shape individuals' fertility attitudes, norms, and perceived control, which in turn shape their intentions. Whether through the shaping of beliefs by observing or interacting with important others or through the shaping of motivations to comply with social norms, the broad sociological context in which the decisions are made is essential to consider in decision-making processes, and such factors—as discussed in detail above—can account to some degree for role decisions and the considerable changes in both women's childbearing behaviours and career achievement over the past few decades. It is not simply enough to consider the social and situational context of the individual, however. How each person may respond to those contextual variables can vary greatly on an individual level. Perhaps the most potentially informative approaches informing our attempts to understand decisions and intentional behaviours come from social cognitive theories of decision-making.

Recently, Bachrach and Morgan (2013) have proposed a cognitive social model to understand individuals' fertility (and other role) intentions (see Figure 1.1). These authors argue that—in contrast to their own interpretations of competing theoretical perspectives proposed by others (e.g., Ajzen, 2011a, 2011b; Ajzen & Klobas, 2013)—fertility decisions are not the always the result of a rational thoughtful process, as evidenced by the finding that about 50% of pregnancies are unplanned (Finer & Henshaw, 2006)—although it is also worth noting here that this may be an overestimate as others have found that only 10% of pregnancies are considered by women to be *entirely* unintentional (Mosher et al., 2012; Spéder & Kapitány, 2009).

Nevertheless, to explain fertility that results from decisional processes along the spectrum of intentional to unintentional, Bachrach and Morgan (2013) argue that more complex modeling of cognitive processes is required. Following from current dominant models in cognitive research, they argue that there are automatic (subconscious) and intentional (conscious) levels of processing that must be taken into account. Briefly, Kahneman (2001) argues that our mind

Figure 1.1. Bachrach and Morgan's (2013) Cognitive-Social Model of Intentions



Note. From Bachrach and Morgan (2013; Figure 3, p. 466). Reprinted with permission from John Wiley & Sons.

cannot consciously deliberate about all possible decisions; therefore, many decisions are made efficiently by what Kahneman terms System 1, which processes information quickly, automatically, frequently often using heuristics and emotions. In contrast, he posits that System 2—which can override System 1—is reserved for slow, effortful, logical, deliberative, and calculating decisions (i.e., reasoned decisions and actions). The automatic decisions of System 1 are often made based on heuristics and are aided by inter-connected networks of mental representations of the self, others, and the world; that is, automatic decisions are aided by schemas, which can be activated by environmental cues. Schemas can also be activated by conscious, calculating decision processes.

Fertility intentions are viewed as fitting with cognitive dual-mode processing models in so much as individuals may engage in subconscious and conscious decision-making that influences fertility-related behaviours. Bachrach and Morgan (2013) argue that people develop fertility-relevant schemas (e.g., parenthood, mothering, childbearing, family) based on social structures (e.g., speech, observable behaviours, environments) and their underlying values, beliefs, and norms. These schemas may be positively or negatively valued and are linked to

people's sense of self or their sense of their future self. Bachrach and Morgan further suggest that the linkage of such positively or negatively valued fertility-relevant schemas can occur automatically (i.e., they are not consciously formed) and, therefore, assessed schemas may not indicate actual intentions.

Bachrach and Morgan (2013) posit the act of conscious intention formation strengthens connections between schemas, the self, and commitment to behaviour. The authors additionally suggest that using a definition of intentions as consciously formulated and situation-evoked is important to consider in fertility intention research. They posit that asking individuals to express their intentions in research may not elicit actual intentions, but it may instead elicit positive or negative schemas that might not be firmly integrated into their sense of the future self because it has not been consciously deliberated and incorporated into their sense of the future self.

The formation of intentions, Bachrach and Morgan (2013) contend, demands deliberative, conscious processes that are only evoked when required by particular situational circumstances (e.g., situations that are new, unexpected, or require consideration of potentially opposing options). To that end, fertility-related schemas may remain unconnected to career-related schemas until they are explicitly evoked by a situation that activates both sets of schemas pertaining to these different life domains. The model in Figure 1.1 can be expanded to include intentions related to various life domains (e.g., career, education, work, leisure) and account for their potential relationships on fertility intention formation (and vice versa).

To date, the Bachrach and Morgan cognitive social model of intentions has not been formally tested, although it has been retrospectively applied to explain existing findings. While this model specifically attempts to improve upon previous proposed social-cognitive theories, the perceived shortcomings of other models (e.g., Ajzen and Klobas's [2013] Theory of Planned Behaviour as applied to fertility intentions, discussed below)—that Bachrach and Morgan (2013) identify and argue their model overcomes—have been founded in part on misinterpretation of Ajzen's (1985) theory. A detailed critique of this model in comparison to the theory of planned behaviour is provided below, following a detailed overview of Ajzen's (1985) theory.

1.10 Theory of Planned Behaviour

The theory of planned behaviour (TPB) was proposed by Ajzen (1985, 1987, 1991) to predict individuals' volitional behaviours. Ajzen (1985) proposed the TPB in order to build upon and refine the theory of reasoned action (TRA; Ajzen & Fishbein, 1980). As such, the two

theories share several assumptions. Specifically, both theories argue that people are rational beings who use information systematically to inform their decisions and to consider the implications of their behaviours. Further, both theories consider behaviours to be goal oriented and assume that people understand the behaviours required to achieve goals (Ajzen, 1985). For example, it is assumed that people are likely to be aware of the potential necessity of obtaining an education to get a career or of finding a partner with whom to have unprotected sex to become a mother. As first posited in the TRA, individuals' intentions to perform specific behaviours determine the actual performance of those behaviours (Ajzen, 1985; Ajzen & Fishbein, 1980). Intentions represent a commitment to performing behaviour or, at the very least, a commitment to *attempting to perform* the behaviour (Ajzen, 1985; Bandura, 2001). Indeed, across a variety of behaviours, intentions predict performance (or attempted performance) of behaviours (Ajzen, 1985, 1991) and demonstrate much better predictive ability than attitudes towards behaviour alone (Ajzen, 1985). The stronger relationship between intentions and behaviour compared to attitudes and behaviour is not unexpected: Individuals may hold positive attitudes towards a particular behaviour but may ultimately not be committed to engaging in that behaviour. Given the strong, although imperfect, relationship between intentions and actual behaviours, intention may be used as a measure of actual behaviour (Francis et al., 2004).

It is important to note that the predictive accuracy of behavioural intentions of actual behaviours decreases as the time between the formation of intentions and actual time to perform the behaviour increases (Ajzen, 1985, 2005; Ajzen & Fishbein, 1980). That is, intentions are less predictive of behaviours over time, which may be important to consider in relation to young women's childbearing and career intentions. The greater the duration of time between formation of intention and behaviour raises the likelihood that unanticipated events will occur that could alter intentions or one's ability to implement the intended behaviour. For example, people might report having strong intentions to engage in both roles when younger, but they might also encounter unexpected life events or gather new knowledge that changes their intentions and beliefs. Despite this shortcoming of intentions as a proxy for actual behaviour, researchers have argued the predictive utility of intentions for childbearing may be dependent upon the timeframe for follow up. For example, intentions were less predictive of actual fertility behaviour when measured within a 2-year-period (Westoff & Ryder, 1977) and more accurate when measured within a 4-year-period (Rindfuss, Morgan, & Swicegood, 1988). As time passes, childbearing

intentions also change, adjusting downward: Over the course of a 23-year period, women's achieved fertility by 2002 was closer to their intended number of children in 1982 than their intended number of children in 1979 (Miller, Rodgers, & Pasta, 2010). In spite of deplorably low fertility awareness in post-secondary educated individuals overall (Lampic et al., 2006; Peterson et al., 2012; Svanberg et al., 2006), Toulemon and Testa (2005) discovered individuals with post-secondary education anticipated their actual fertility behaviours more accurately (i.e., childbearing and childfree intentions and behaviours were more aligned) than those without post-secondary education. Consequently, it is possible that there might be even greater slippage between intentions and behaviours over time for populations of less-educated individuals.

It is also important to note that the current study is concerned with *intentions* more so than actual pregnancy outcomes: Young women are forming intentions and making decisions in early adulthood and those decisions may have particular ramifications relevant to their ability to actually engage in the desired behaviour (e.g., career, motherhood, dual mothering and career roles). The behaviours subsequent to forming intentions—but preceding women's actual engagement in career and/or motherhood roles—can have an impact on young women's ability to perform the intended behaviours. For example, given the relationship between increased age and decreased fertility (Bretherick, Fairbrother, Avila, Harbord, & Robinson, 2010), young women making decisions to postpone parenthood in pursuit of careers may be increasing the potential risks of fertility-related difficulties from conception to maternal and infant health. Similarly, young women making decisions to pursue motherhood in earlier years of their life may be limiting their later income or progress in education and/or careers. Although achieved behaviours are an important component of the current research, young women's intentions and their implications for subsequent decision-making around, and achievement of, parenting and career roles are important considerations in and of themselves.

1.10.1 Predicting intentions.

Although it is practical to posit that behaviours are predicted by intentions to perform those behaviours, this explanation does not elucidate *why* individuals engage in specific behaviours (Ajzen & Fishbein, 1980) nor does it describe *how* behavioural intentions themselves are formed. Consequently, TRA and TPB also describe two factors—a personal factor and a social factor—that shape individuals' intentions to (decisions to or not to) engage in behaviours. The personal factor is *attitudes* towards the behaviour (behavioural beliefs). Essentially, this

construct represents individuals' personal evaluations of whether the potential behaviour is positive or negative. More specifically, this personal evaluation factor is composed of individuals' various beliefs about the consequences of the specific behaviour and their subjective evaluations of the valence (positive or negative) of these potential consequences (Ajzen, 1985; Francis et al., 2004). For example, two young women may respond differently even though both hold the belief that parenting will provide them with someone who will depend on them: Although both women share this belief, they may evaluate this particular outcome or consequent differently. That is, one woman may evaluate this aspect of parenting as negative (e.g., as limiting autonomy) whereas another may evaluate this aspect of parenting as positive (e.g., as feeling needed). Yet still other women may simultaneously hold both negative and positive views of parenting, with their attitudes toward the behaviour falling somewhere along a spectrum between wholly negative and wholly positive.

In addition to individuals' attitudes towards the specific behaviour, both theories propose that there is a social factor contributing to behavioural intentions, and they refer to this as *subjective norms* (Ajzen, 1985; Ajzen & Fishbein, 1980). Ajzen (2006) argues that the construct of subjective norms in part describes the social context individuals perceive around performing or not performing the specific behaviour (normative beliefs). Subjective norms are composed of two related constructs: normative beliefs and individuals' positive and negative evaluations of these beliefs. Specifically, subjective norms encompass (a) beliefs about how people or groups who are important to the individuals think the individuals should behave as well as (b) individuals' judgments on the importance of these people's or groups' opinions, which is ultimately reflected in their level of motivation to comply with the expectations of others. For example, a young woman may perceive social pressure from her grandmother who wants her to become a mother in the future (i.e., normative belief), but the young woman may not feel her grandmother's opinion is important (i.e., low motivation to comply). In contrast, that same young woman may place higher value on the opinions of her friends, who she feels would also expect her to become a mother in the future.

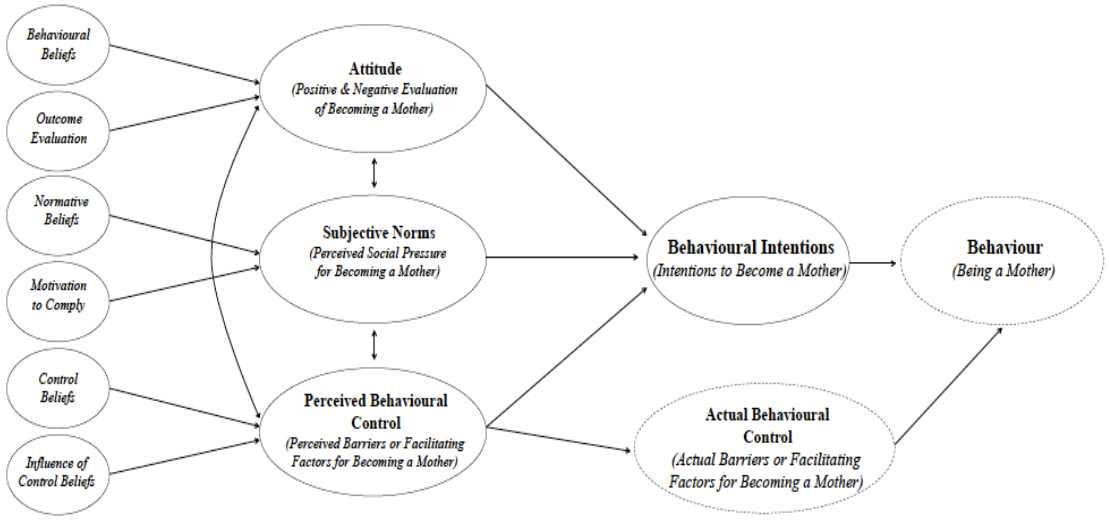
Both the TRA and TPB propose that behaviours are predicted by intentions, which are in turn predicted by attitudes and subjective norms; however, the TPB expands upon this model in order to improve predictive utility under circumstances in which individuals may have lower control over their performance of the intended behaviours. Specifically, in contrast to his earlier

position in Ajzen and Fishbein (1980), Ajzen (1985, 1991) argued the TRA inadequately predicts all human behaviour because not all actions are under the complete volitional control of individuals. In such cases, individuals may possess behavioural intentions but may be unable to complete the behaviour. For example, a woman may want to become a mother but a number of factors, such as the partner availability, partner intentions to parent, and fertility, may not be within her control, thus inhibiting her from achieving her intended goal of becoming a mother. Similarly, another young woman may want to pursue a career but may not be able to afford education, complete the requisite schooling, or have such opportunities available in her geographical location, which will ultimately inhibit her from pursuing from this valued behavioural goal.

Ajzen (1985, 2002) proposed TPB to account for the influence of volitional control on behaviour, adding the construct of perceived behavioural control to the original TRA model. Figures 1.2 and 1.3 provide a visual representation of the TPB model for both mothering and career intentions, respectively. The perceived behavioural control (PBC) construct is thought to contribute both directly to the prediction of behaviour as well as indirectly through shaping behavioural intentions. PBC helps to account for the possibility that people are aware of potential impediments to the implementation of their intended behaviour and may consider such factors when generating their intentions.

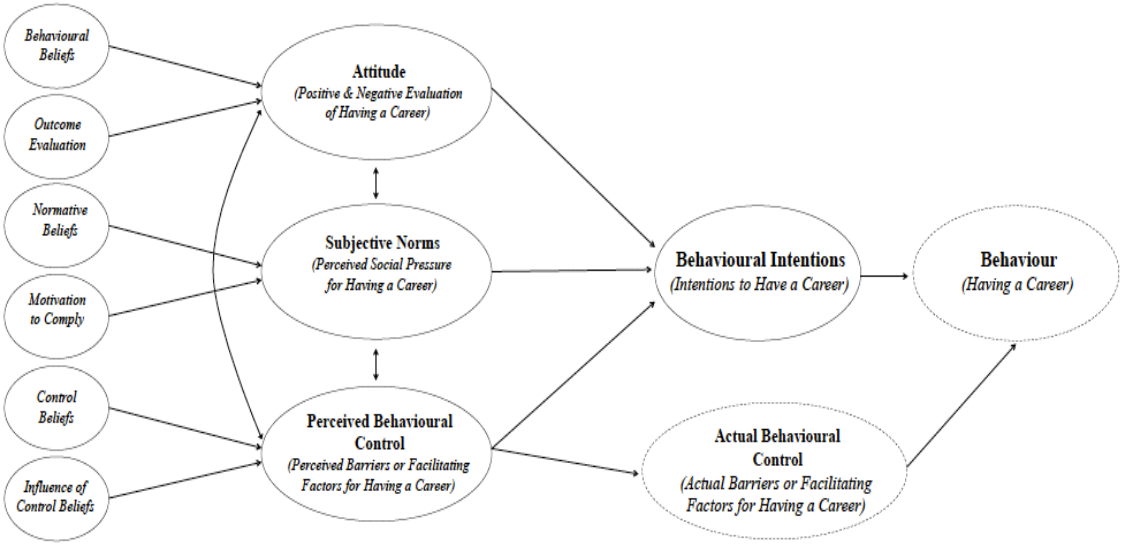
Although Ajzen (2008) argues that on a conceptual level, PBC and self-efficacy do not differ given that both refer to one's beliefs about whether or not he or she can perform a behaviour, PBC is more than the belief in the easiness or difficulty of performing an action because it includes one's *perceived control* over performing the behaviour (control beliefs). That is, in contrast to self-efficacy, Ajzen (2002) states that the PBC construct is composed of two factors: (a) individuals' evaluation of how self-efficacious they feel or how competent they feel about their ability to perform (or not perform) the behaviour and (b) individuals' beliefs regarding how much control they have over the behaviour (e.g., factors that facilitate or impede behaviour). Thus, research on self-efficacy in mothering and career decisions may reflect perceived control to some degree; however, it is not a perfect proxy for perceived control. Indeed, Tavousi et al. (2009) examined the distinction between perceived control and self-efficacy constructs, finding support through factor analysis for distinguishing between the two constructs. The distinction between these constructs can be further illuminated with the

Figure 1.2. ***Theory of Planned Behaviour Model for Mothering Intentions.***



Note. Actual behavioural control and behaviour are not assessed in the current research.

Figure 1.3. ***Theory of Planned Behaviour Model for Career Intentions.***



Note. Actual behavioural control and behaviour are not assessed in the current research.

following examples. A young woman may consider becoming a mother and maintaining her career; yet, although she may hold positive beliefs about her ability to conceive, she may worry that she will not find a satisfactory supportive partner who would be willing to support her simultaneous career goals by providing a greater proportion of care to potential children. Thus, this woman's self-efficacy beliefs over the act of having children would be high, but her perceived control would be lower overall because she may consider finding a supportive partner to be something she has no particular control over. Alternately, a young woman may believe she is entirely capable of obtaining a high level of education for her desired career, but she may also believe she will not be able to either afford the desired level of education necessary for her career or she may feel she is unable to be gainfully employed in the area where she resides and unable to relocate, given familial considerations. Again, the woman would hold high self-efficacy but low control over factors that may inhibit her ability to act on her career desires. Finally, another young woman might have high perceived control with respect to having a career and could take over her family's business, but she may simultaneously have low self-efficacy beliefs about her business capabilities, resulting in low overall PBC.

Consequently, for these women PBC may ultimately predict behavioural intentions that are opposite to their attitudes and subjective norms. In the first and second scenarios, even though the young women may possess favourable attitudes and subjective norms that would otherwise predict high behavioural intentions towards mothering and careers, respectively, those young women may express low intentions to become a mother or to have a career because their PBC related to the respective roles is low. In the last scenario, low PBC may translate into the young woman's low intentions to pursue a career, despite having favourable attitudes and subjective norms that would predict high behavioural intentions towards pursuing a career in the absence of low PBC.

Although the relative importance of attitudes, subjective norms, and PBC vary across behaviour (Ajzen, 1991), generally individuals with more favourable attitudes and subjective norms and greater PBC will ultimately express greater intentions to engage in the behaviour (Ajzen, 2006). In circumstances characterized by similar PBC and actual behavioural control, individuals will be likely to act upon their behavioural intentions. Ajzen (2006) further noted that to the extent that individuals *accurately* assess it, PBC can reliably estimate actual behavioural control in the prediction of behaviour. Finally, it is argued that the addition of PBC adds

significantly to the predictive utility of the theory. Indeed, in comparisons of the TRA and the TPB, Ajzen's (1985) addition of PBC appears to make the TPB a more robust predictor of behaviour when the target behaviour was not under complete volitional control (Ajzen & Madden, 1986; Godin & Kok, 1996; Madden, Ellen, & Ajzen, 1992; Theodorakis, 1992). Given its predictive utility and its ability to account for a wide range of behaviours, Armitage and Conner (2001) argued that the TPB has been one of the most extensively applied theories to assess volitional behaviour.

1.11 Application of Theory of Planned Behaviour to Mothering and Careers

The TPB has been shown to predict a number of volitional behavioural intentions and actual behaviours. For example, the TPB has been supported across multiple domains of behaviours, including exercise, smoking, drug use, and HIV/STI prevention behaviours (for a review see Montaño & Kasprzyk, 2008) as well as aggression (Brown, 2006), leisure participation (Ajzen & Driver, 1991), public transportation use (Heath & Gifford, 2006), and education (Davis, Ajzen, Saunders, & Williams, 2002). Further, some researchers have found that the TPB has good predictive utility with regards to mothering decisions, such as timing and number of children (Dommermuth, Klobas, & Lappegård, 2011, 2014; Miller & Pasta, 1994), and with regards to vocational decisions, such as applying for promotion (Giles & Larmour, 2000), contingent employment intentions (Huang, 2011), and temporary employment (Van Hooft & De Jong, 2009).

The TPB has also been applied to various other aspects of career intentions. Arnold et al. (2006) also examined the applicability of the TPB to work intentions. Their sample consisted of 978 adults, who were unqualified, in training, or qualified for a particular health field. The researchers found that attitudes and subjective norms were strong predictors of intentions; however, PBC was not as strongly associated with intentions. The model was a better fit for those who were qualified and was not as good for those who were unqualified or in training. The authors concluded that TPB variables have varying levels of importance for different groups and that it is important to attend to differences in people's circumstances (e.g., patterns of past vocational decisions and behaviours) in addition to TPB variables.

Giles and Larmour (2000) applied the TPB to women and men's intentions to apply for a promotion. For both men and women, all three TPB constructs predicted intentions, the strongest of which was PBC. Indeed, PBC explained approximately 71% of the variance in women's

intentions to apply for a promotion. In a test of the TRA, Vincent et al. (1998) examined longitudinal data on career intentions. The authors found college women's attitudes—in this case gender-role attitudes in particular—and social norms predicted career intentions and actual behaviour over a period of 14 years.

In another examination of the applicability of the TPB, Giles and Rea (1999) assessed the TPB's ability to predict men and women's career intentions. The authors found gender differences that were predicted by PBC and attitudes and not subjective norms. Men who report intentions to pursue traditionally male occupations (e.g., action-oriented careers, such as management, business) also report feeling they would be less competent in traditionally female occupations (e.g., people-oriented careers, such as nursing or social work). These men also reported that they did not have the patience or want the perceived responsibility or stress associated with traditionally female occupations. Giles and Rea (1999) also found similar results for women: PBC and attitudes—but not social norms—predicted women's intentions to engage in traditionally female occupations. Yet it should be noted that others (e.g., Fulcher & Coyle, 2011) found the career attitudes and the actual career behaviours of mothers—a subjective norm referent under the TPB—predict the career intentions of their daughters, suggesting that subjective norms are likely important to career intentions. Moreover, it is possible that social referents do not simply contribute to subjective norms but also to the development of young women's beliefs and, therefore, attitudes. Nevertheless, Giles and Rea's (1999) research suggests attitudes and PBC play an important role in the career decision-making process of both men and women. The authors speculated that men might be reluctant to adopt egalitarian roles because they perceive themselves as less competent, lacking the qualities required (e.g., patience) for those roles.

Although the TPB has been extensively applied to the vocational realm, it has only more recently been used to predict nonspecific career intentions (i.e., to pursue a career or not as opposed to pursuing specific career types or specific employment conditions). Similarly, there is a relatively recent burgeoning literature applying the TPB to parenting intentions. Moreover, there is a large body of previous literature that has not specifically applied the TPB but, nonetheless, suggests attitudes, subjective norms, and perceived control are important to consider when assessing mothering intentions. For example, individuals' perceptions of parenthood (i.e., attitudes) are strongly related to their reproductive decisions (Lampic et al., 2006; Lawson,

2004). Drawing from the infertility literature, the social network of individuals can be a significant source of pressure to reproduce (Cassidy & Sintrovani, 2008; Dawson, Diedrich, & Felberbaum, 2005; Miles, Keitel, Jackson, Harris, & Licciardi, 2009). Women who persist in assisted reproductive treatments after failed attempts have reported high levels of perceived social pressure (Widge, 2005) and high levels of support (Vassard, Lund, Pinborg, Boivin, & Schmidt, 2012), especially relative to those who choose to discontinue treatment and accept childlessness (Callan et al., 1988; Vassard et al., 2012). The TPB may also be an appropriate framework given that—as described above—mothering is not an entirely volitional activity: There are a number of potential circumstances that can interfere with women's ability to become a mother. In addition to age and fertility, the intention to mother depends on a number of partnership and situational variables, including availability of a partner, partner characteristics, financial stability, or partner's intentions to parent (Benzies et al., 2006; Zabin, Huggins, Emerson, & Cullins, 2000). Cooke et al. (2012) found women perceive a lack of choice around mothering in terms of uncontrollable life circumstances (e.g., timing, availability of a partner, financial stability, health, and fertility). In light of these broad research findings, the TPB is arguably a potentially useful theory that may account for the influence of women's individual, social, and situational factors on intentions to mother and intentions to have a career. Models of mothering and career intentions using TPB are provided in Figures 1.2 and 1.3, respectively.

Support for the likely importance of attitudes, social referents, and perceived control in mothering intentions can be deduced from past atheoretical research findings; however, researchers have also started to explicitly examine the application of the TPB to various aspects of parenting intentions. In two position articles, Liefbroer (2011) and Ajzen and Klobas (2013) argue in favour of the application of the TPB to fertility intentions, as it allows for the simultaneous consideration of intention-related factors that are important at both the individual and the societal level. Moreover, Ajzen and Klobas (2013) argue that the TPB can provide insight into areas of potential concern that may be addressed through policy or interventions to either promote or suppress particular intentions or behaviours. Finally, the authors caution against applying the TPB to pre-existing research that has not been guided by the TPB from its initial construction (e.g., caution against selecting attitudinal, social norm, and PBC items from the research literature), as such approaches increase the risk of excluding important variables and including variables that may not be considered important by the population of interest.

Cavalli and Klobas (2013) used the TPB to assess the relationship between intentions, uncertainty in fertility decision-making (i.e., people who "haven't thought" about parenthood, who do not rule out the possibility but also do not express clear intentions, or who are uncertain about the timing of parenthood) and attitudes towards mothering. They found uncertainty decreased the likelihood of achieving intended behaviours and that positive attitudes, stemming from beliefs about the role of children in improving relationships and life satisfaction, were associated with greater intentions to have a child. Caplescu (2014) found that, in addition to age and previous children, attitudinal factors and perceptions of partner's attitudes towards childbearing contributed to the prediction of short-term childbearing intentions. Billari, Philipov, and Testa (2009) also assessed fertility intentions using the TPB. They found that all three TPB constructs were associated with childbearing intentions of the childless and, for those who were already parents, attitudes were more important than social norms. Further, Billari et al.'s (2009) results also revealed a number of background factors that contributed to the model through attitudes, social norms, and PBC: these included socioeconomic considerations, social capital, age, marital status, employment, and religiosity. Mencarini, Vignoli, and Gottard (2015) replicated these findings in a sample of 2871 women aged 18 to 49 who reside in Italy. These authors also found that all three TPB constructs were associated with childbearing intentions and (indirectly) fertility behaviours. In addition, they also found support for the influence of various background factors on the three TPB constructs. However, they noted that the influence of these factors was not entirely mediated by the three constructs; that is, there were direct effects for background factors on fertility intentions and behaviours as well, suggesting that assessing attitudes, subjective norms, and PBC related to mothering may not be sufficient in terms of capturing potentially relevant constructs that may have some bearing on their mothering intentions. Specifically, they found situational factors, such as number of siblings, age, relationship quality, proximity to parents, satisfaction about housework division, and employment situation of both partners to be important considerations in childbearing intentions. Given Mencarini et al.'s (2015) findings, it is all the more likely that factors associated with other life roles, such as careers, may be important to consider.

Dommermuth et al. (2011, 2014) applied the TPB to the timing of fertility intentions. In their 2011 study, with a large sample men and women (N = 4,741), the authors found evidence that subjective norms and PBC significantly predicted childbearing desires in individuals who

are not already parents; however, the relationship between desires and perceived control becomes nonsignificant once demographic variables are considered. In contrast, for individuals who are already parents, further childbearing intentions were predicted by positive (and not negative) attitudes, subjective norms, and PBC—the latter of which again became nonsignificant when demographic variables were included in the model. In their longitudinal 2014 study, these authors found that immediate fertility intentions were associated with greater fertility success than fertility intentions that were long-term; that is, the achievement of first birth was about 55% higher for women who indicated they wanted to have a child at the time of the first wave compared to women who indicated that they wanted to have a child within a three-year period from the time of the first wave. The authors also found that parents were better at achieving subsequent children than childfree individuals were at achieving first births. Based on this finding, they speculated that individuals without children underestimate the potential challenges (i.e., PBC factors) associated with achieving their intentions, subsequently resulting in greater difficulty achieving those intentions.

Balbo and Mills (2011) contend that their study was designed to test an expanded model of the TPB wherein family network is considered to be a contributor to attitudes, subjective norms, and PBC, which in turn influences fertility intentions and behaviours. They further contend that family network directly contributes to two additional constructs—reinforcing factors (e.g., siblings childbearing, social capital) and actual behavioural control—which, in turn, predict fertility behaviours. Although they found support for the role of the family network in fertility behaviours, the statistical models presented in their study did not include any attitudinal, social normative, or PBC factors. As a result, the authors were unable to directly test the degree to which family network characteristics are actually related to TPB constructs, intentions, and behavioural outcomes.

Although the majority of these studies provide some support for the TPB in predicting childbearing intentions, most have design shortcomings. Many of the TPB fertility intentions studies described above did not include elicitation studies, as recommended by Ajzen (2006) to identify the relevant attitude, social norm, and PBC factors that are likely to be most relevant to the population of women being studied. For example, the study questions used by Dommermuth et al. (2011, 2014) were developed by Vikat et al. (2007) to measure the TPB constructs; however, these items were derived from the fertility intentions literature and not from a

subsample representative of the population of interest. Similarly, others (e.g., Caplescu, 2014; Klobas & Ajzen, 2015; Mencarini et al., 2015) have attempted to assess the utility of the TPB for understanding fertility intentions and behaviours using items that were not generated using the recommended TPB elicitation approach (see Ajzen, 2006; Montaño & Kasprzyk, 2008). As such, it is difficult to know whether or not the items used actually capture the relevant attitudes, social norms, and PBC factors that are important to the populations of interest or whether other items that are potentially irrelevant have been included. Further, these constructs were assessed using direct measures of the variables that compose the three constructs, as opposed to separately measuring beliefs and the degree to which individuals endorsed those beliefs (see method section below for specific details about TPB item construction and construct measurement).

Beyond the shortcomings in the current TPB fertility literature just described, others have accused the TPB itself of having serious shortcomings. The creators of the cognitive-social model of intentions (Bachrach & Morgan, 2013), as discussed above, argue that the TPB (a) lacks the ability to account for the material structures relevant to the development of intentions, (b) is not consistent with current understanding of cognitive processes, (c) cannot account for the slippage between intended and achieved fertility, and (d) the TPB cannot account for the revisionary nature of life role decision-making. Each criticism has previously been addressed by Ajzen (2011a, 2011b; Ajzen & Klobas, 2013).

Ajzen (2011b) and Ajzen and Klobas (2013) argue that various background factors (e.g., personality, education, values, age, income), which Bachrach and Morgan (2011, 2013) accuse the TPB of lacking, are accounted for within the construct of attitudes. Specifically, these background factors feed into attitudes by shaping individuals' beliefs and valuing of those beliefs. In this way, the influence of these factors on intentions is mediated by attitudes. However, Ajzen and Klobas (2014) also suggest that the TPB model should be considered with situational and demographic contextual factors in mind (e.g., age, country, gender).

Bachrach and Morgan (2013) also argue their cognitive-social model is compatible with the theory of reasoned action, but the models differ in that the former can better account for behaviour that occurs in the absence of conscious intention. This is a straw man logical fallacy: Although the conscious and unconscious processes are not explicitly modeled in the TPB, there is no assumption in the TPB model that the intention formation and behavioural process must be a rational (i.e., System 2) form of conscious deliberation. Indeed, Ajzen (2011b; Ajzen &

Fishbein, 2000) argues the beliefs measured by the TPB shape reasoned decision-making (System 2) *and* they also implicitly influence behaviour (consistent with System 1) generally without the need for any conscious effort (i.e., without the need for System 2 to override the unconscious cognitive processes).

As noted, Bachrach and Morgan (2013) contend that the TPB neither adequately explains the observed differences in stated intentions and achieved fertility nor does it account for the iterative process of intention formation and schema revisions. In addition to needing to differentiate between intentions and actual behaviour, which Bachrach and Morgan (2013) conflate, according to the basic tenets of the TPB one reason for the disparity between intentions and achieved fertility may be actual control factors (e.g., finding a partner, fertility, social policy, employment). Further, although not directly addressed in the dominant basic model, there is no assumption in the TPB that one's beliefs are static. Indeed, Fishbein and Ajzen's (1975) full model, as originally proposed, suggests that these factors are subject to revision over time. Attitudes, subjective norms, and perceived control are likely to change as one encounters new experiences. New experiences feed back into schemas and, therefore, reshape individuals' attitudinal and normative valuing of their original intended goal(s). Moreover, this is consistent with the finding that intentions are best predicted by the TPB factors when the time between measured intentions and actual behaviours is briefer (i.e., likely providing less opportunity for experiential feedback that produces changes in beliefs).

Moreover, the primary focus of this research is on understanding women's intentions as determined in young adulthood (i.e., prior to being pregnant and needing to decide at that time whether or not to continue with the pregnancy). The goal of the current research is to understand the factors that may contribute to both the career and mothering *intentions*, and not the actual outcomes nor sexual or reproductive behaviours, of young women. The literature clearly paints a picture of delayed parenthood, increased employment, and the lower rate of realization of fertility relative to fertility goals. While it is important to identity the factors and mechanisms that contribute to all pregnancies and realized fertility, it is equally important to understand intentions (and not achieved behaviours) in and of themselves. Indeed, it is possible that the formation of such *intentions* in young adulthood—at a point in time where individuals may not know or consider other relevant but potentially temporally distant factors—may prevent young women from being able to *achieve* their stated fertility (and career) intentions in the future. A

goal of the current research is to help identify not only the factors relevant to these decisions, but also to demonstrate that potentially relevant information may not be considered by young women (or available to them) when young women are making future life-role decisions (e.g., by omission in elicitation study).

The growing body of literature suggests that the TPB is well suited to understanding both mothering intentions and career intentions. However, one potential important shortcoming of applying the TPB to intentions to engage in different roles in isolation (i.e., without explicitly considering the attitudes, subjective norms, and PBC important to decisions around other possible roles) is that the basic TPB model of intentions may not entirely capture the influence of other role intentions. Investigations of intentions to mother, without also directly eliciting attitudes about related life roles, such as careers, may not account for how attitudes about those other potentially important related constructs (e.g., careers) may also contribute to behavioural intentions. For example, although eliciting beliefs about intentions to mother may evoke particularly salient general beliefs about the impact of mothering on careers (e.g., "becoming a mother will impact my career"), it was possible that the elicitation process could not adequately identify the various more nuanced aspects of career attitudes (e.g., "having a career will make me a less competent mother"), subjective norms (e.g., boss, male and female colleagues), and PBC factors (e.g., "not having daycare would make it more difficult to have a career) that may also be relevant to shaping young women's mothering intentions. Therefore, an expansion of the model to include the attitudes, subjective norms, and PBC beliefs related to other life roles can contribute to a better understanding of how they may shape intentions for the role of interest.

It is possible that assessing potentially more nuanced aspects of career attitudes, relevant subjective norms, and PBC factors in addition to overall mothering attitudes, subjective norms, and PBC may contribute to a better understanding of young women's mothering intentions. The same possible shortcoming is potentially true for predicting one's intentions to have a career—that is, the recommended elicitation phase inquiring broadly about careers may evoke more simplified and all-encompassing attitudes, subjective norms, and PBC factors related to careers and more general potential positive or negative impact of careers on mothering. However, it was possible that more nuanced aspects of mothering attitudes and relevant subjective norms would not be elicited through career-focused questions. The inclusion of mothering-specific attitudes, subjective norms, and PBC in conjunction with overall career attitudes, subjective norms, and

perceived control may contribute to a better understanding of young women's career intentions. Consequently, given the potential limitations of the basic TPB in terms of the lack of ability to capture all relevant factors associated with the two highly-related life role decisions of mothering and career intentions, the current study explored the potential contribution of attitudes, subjective norms, and PBC factors related to both intended behaviours. Moreover, although not yet investigated in the literature, the inclusion of these other relevant beliefs (i.e., attitudes, subjective norms, and perceived control) for mothering intentions (and career intentions) is entirely consistent with the TPB (Ajzen, 2011a). Indeed, in the current research, two expanded TPB models were tested to measure each behavioural intention: (a) a model of mothering intentions considering career-related beliefs and (b) a model of career intentions considering mothering-related beliefs. Figures 1.4 and 1.5 provide visual representations of the expanded TPB models for intentions to mother and intentions to have a career, respectively.

1.12 Current Theoretical Limitations in the Literature

Given the decreasing birth rates, increased rates of postponed parenthood and childfree individuals, commonality of dual roles and work-family conflict experiences, changing gender role attitudes, and growing emphasis on personal and career development, it is important to understand the various factors potentially directly and indirectly influencing young adults when making reproductive and career decisions. Decision-making about one's future life role(s) does not occur in perfect isolation from all other life-role decisions. At some level, even if other roles are ultimately rejected, our perceptions of those other life-roles—which may be potentially competing—are likely considered in relation to the role about which we are making decisions. Decisions to pursue a specific role in isolation or in tandem with other roles may be shaped by factors related to each additional role. That is, intentions to (or not to) parent may be related to, or influenced by, career intentions and career intentions may be related to, or influenced by parenting intentions. Nevertheless, despite the abundance of research on factors associated with parenting and career decision-making of childless teenagers and young adults, little research has examined decision-making while considering the influence of competing roles. Indeed, relatively few researchers have examined the specific influence of parenting decisions on career goals as well as the influence of career goals on parenting decisions (Fulcher & Coyle, 2011).

For the most part, the theoretical approaches described above address factors that contribute to either parenting or career intentions in isolation, but researchers have generally been slower to

Figure 1.4. ***Expanded Theory of Planned Behaviour Model for Mothering Intentions.***

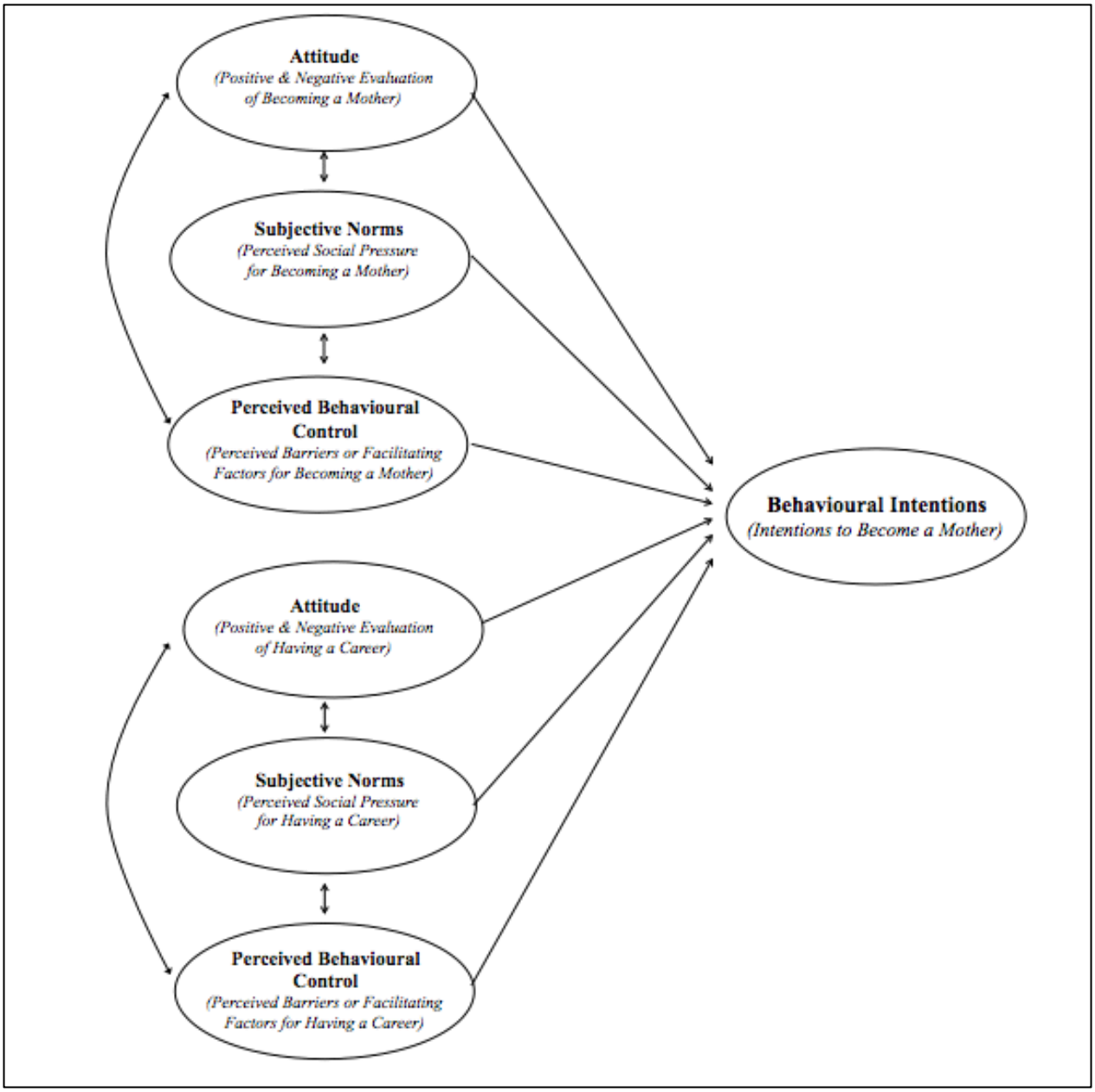
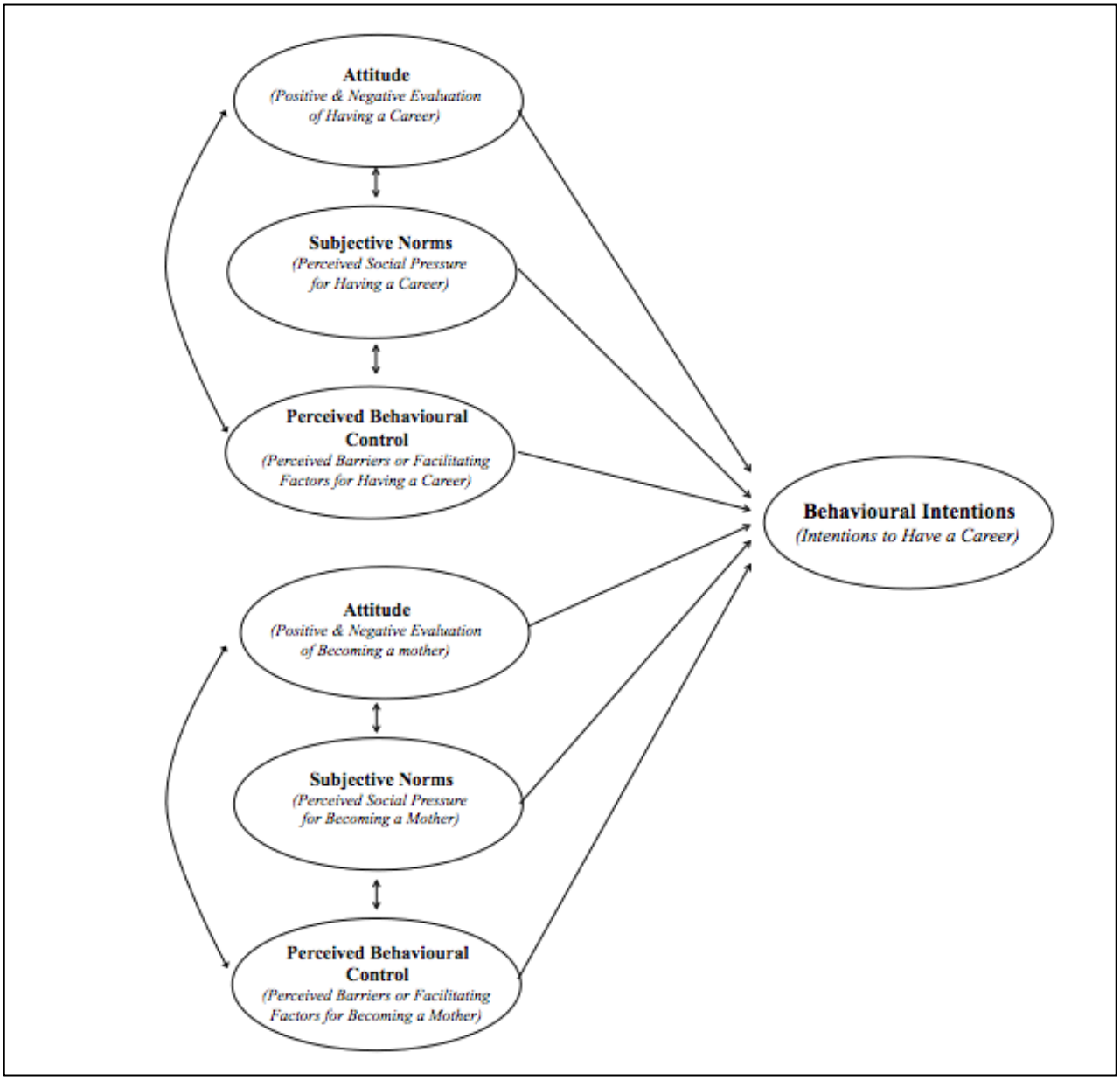


Figure 1.5. ***Expanded Theory of Planned Behaviour Model for Career Intentions.***



move towards a simultaneous consideration of multiple role decisions and the factors associated with each role that could influence women's other role decisions. Consequently, parsimonious theories that apply broadly to understanding the processes of multiple role decisions (e.g., parenting *and* career decision-making) are required.

To date, the theoretical perspectives that have been applied have not been able to provide a cohesive overarching understanding of the various psychological, sociological, and situational factors that contribute to women's parenting and career decisions. As already noted, such approaches have for the most part been intention specific (i.e., only apply to careers, only apply to fertility intentions) and have not been able to simultaneously consider both the individual contributing factors to each role intention and the potential interaction effects of multiple role (i.e., career and mothering) decisions. Given the extent to which mothering and career role intentions appear to dynamically interact, a useful theory will elucidate attitudinal, social, and life circumstances or societal constraints factors relevant to mothering decisions and will also illuminate the factors relevant to career decisions without adding a level of complexity that is forbiddingly impractical for use in research.

One possible theoretical solution to the multiple role difficulty in the literature is the theory of planned behaviour (TPB). In previous research, the TPB has been applied to mothering decisions as well as career decisions separately. The TPB has demonstrated utility in aiding our understanding of the various factors that shape individuals' behavioural intentions for pursuing motherhood (Klobas, 2010; Miller, 2011) and for pursuing higher education and/or careers (Giles & Rea, 1999; Vincent et al., 1998). Although the TPB may lend itself to considering multiple life role decision-making factors (see Ajzen & Klobas, 2013), to date TPB studies have focused on single life-role decision-making.

1.13 Additional Limitations of Previous Research

Across the broad areas of mothering and career intentions, work-family conflict, and gender roles, there are a number of limitations in our current understanding of each area of research. There are also additional limitations in the literature at the intersection of these multiple interrelated domains.

Perceived or anticipated conflict may impact individuals' intentions to parent and may contribute to the decisions of a growing number of men and women who are choosing to remain childfree. Unfortunately, research on people who choose to be childfree and work-family conflict

is limited in a number of ways. Specifically, often researchers investigating childless individuals focus on childfree individuals in later stages of development (e.g., 40 or more years of age) and many studies of childfree individuals include people who are both voluntarily and involuntarily (i.e., infertile) nulliparous. It is likely that the attitudes, decisions, and experiences of voluntary and involuntary childfree individuals are qualitatively different. Therefore, it is important to differentiate between individuals who actively choose not to become parents versus individuals who may ultimately be childless involuntarily but had formed intentions to bear children. Additionally, some researchers examining childbearing intentions have narrowly focused on a subset of individuals who are highly educated (e.g., graduate level) and those who hold academic positions (e.g., Kemkes-Grottenhaler, 2003; Lampic et al., 2006). In terms of the work-family conflict literature, one shortcoming is the focus on individuals who have chosen to parent and have successfully produced children. That is, there is a dearth of literature examining individuals' perceptions of simultaneously engaging in work and family roles prior to bearing children. Moreover, this literature does not tend to connect these perceptions of dual work-family roles to intention formation. Thus, it is important to investigate whether or not career intentions as well as attitudes and perceptions of work-family conflict are associated with individuals' decisions to parent. To date, it appears that limited research has been conducted on intentions to parent in relation to anticipated work-family conflict and how this may contribute to the decision-making of young nulliparous adults.

A plethora of research has been conducted that separately investigates intentions to parent and work-family conflict; however, these literatures have promoted simplistic views of both phenomena. Specifically, although the intentions to parent literature has investigated fertility awareness (e.g., Lampic et al., 2006; Peterson et al., 2012) as well as attitudes towards or motivations to parent (for a review see Lawson, 2004), relatively little is known about how perceptions of work-family conflict may inform young adults' intentions to parent and intentions to pursue careers. Further, the literature that investigates anticipated work-family conflict has narrowly focused on role decisions, and has generally failed to simultaneously consider a number of factors known to be related to career and mothering intentions; it is possible that such factors may moderate the impact of anticipated conflict. Consequently, there is a need to understand individuals' role intentions and anticipated work-family conflict within the greater contexts of their psychological and social lives.

Although previous researchers have identified various factors that contribute to the development of role intentions, there is still a relative dearth of theoretically-driven examinations of role intentions that can comprehensively account for the various important situational, social, and psychological factors involved in decision making. Perhaps chief among the previously identified relevant factors are expectations of facilitating and impeding influences, personal attitudes toward the particular roles, and familial or peer influences. Indeed, as described above, individuals' parenting and career attitudes as well as the values of—and their adherence to the values of—their social normative groups have been identified as important predictors of parenting and career decisions. Specifically, the extent to which young adults ascribe positive and negative beliefs and values to parenting and career roles as well as the extent to which they value the parenting and career-related opinions of other significant individuals or groups in their lives may be important factors that shape intentions to parent or intentions to have a career. Additionally, perceived facilitators (e.g., social supports, finances) or barriers (e.g., lack of childcare, long work hours, children's needs) are also important to consider in the formation of role intentions. Clearly, based on the review above, one theory that may help to broaden our understanding of parenting and career intentions and the relative contribution of attitudinal, social normative, and anticipated situational factors is the theory of planned behaviour.

1.14 Purpose of the Current Research

The overarching goal of the current research was to extend the literature on intentions to parent and intentions to pursue a career by testing a theoretical model of behavioural intentions with young nulliparous women seeking university education using a mixed-method design. Specifically, Study 1 use a qualitative study design to elicit beliefs relevant to the population of interest. The purpose of this study was twofold: (a) to use the content of participants' qualitative responses to inform the development of quantitative TPB scale items for Study 2 and (b) to explore hypotheses relevant to themes participants did and did not identify. In Study 2, it was argued that the TPB could provide an adequately useful framework for understanding young women's decisions to or not to parent. Moreover, in addition to measuring mothering attitudes, subjective norms, and perceived control around intentions to mother, as has been recently investigated in the literature, it may be important to more fully consider other role factors that are increasingly likely to be related to mothering decisions, such as career attitudes, subjective norms, and PBC beliefs.

Similarly, the purpose of the current research was to determine whether or not the TPB could be adequate model for understanding career intentions; however, it was also hypothesized that it would be important to more fully consider additional constructs that were likely related to career decisions, such as specific mothering attitudes, subjective norms, and PBC beliefs. Consequently, another goal of the current research was to assess the applicability of expanded models of the TPB that simultaneously considered participants' attitudes, subjective norms, and PBC beliefs regarding both mothering and careers when examining mothering and career intentions. A final overarching goal of this research was to assess relationships between various other factors (e.g., role salience, gender-role traits, anticipated work-family conflict, fertility knowledge, and specific reproductive intentions) that could contribute to young women's intentions to mother and intentions to have a career.

Chapter 2. Preliminary (Elicitation) Study

2.1 Purpose

The purpose of the elicitation study was twofold. First, following Ajzen's (2006) assertion that an elicitation study is necessary to select beliefs that are not biased by the researcher's preconceptions or biased by previous literature, an elicitation study was conducted in order to elicit the career and mothering beliefs that are held by young, nulliparous women who are pursuing higher education. That is, an elicitation study is an integral part of TPB research that allows researchers to tailor their research questions to the specific population of interest. These beliefs were then used to generate items that could be used to provide belief-based measures of TPB constructs (i.e., belief-based, or indirect, measures of attitudes, subjective norms, and perceived control) in a follow-up quantitative methods study. Second, it was considered important to examine the results of the elicitation phase in terms of not only what beliefs were generated but also in terms of the beliefs that were not generated by the young women in the sample. Indeed, it is important to examine the sample-specific beliefs relative to those that have been identified as important in previous literature given that not all of the latter beliefs may be relevant to this specific population (and other populations) of young women who differ across time and may differ by culture and locale. Inclusion of potentially irrelevant factors to this specific population could then artificially bias the results, encouraging women to consider factors that they might not be aware of and, therefore, factors that might not otherwise be a consideration for them in their decision-making process.

2.2 Elicitation Study Hypotheses

Although the primary purpose of the elicitation study was to provide content that forms the basis of the TPB attitudinal, subjective norms, and PBC questions, based on past research on parenting and career intentions, I postulated that there may be particular patterns observed with respect to the attitudinal, social referent, and PBC beliefs that women might identify.

1A) Women will identify more positive (rewards) than negative (costs) factors associated with becoming a mother and pursuing a career.

1B) Mothers will be the most frequently identified social referents for both mothering and career intentions.

1C) Given growing emphasis on personal development, women will identify few—if any—social referents who they see as disapproving of careers.

1D) Few PBC factors will be identified that pertain to fertility (e.g., age, health, etc.).

2.3 Method

In accordance with Ajzen (2006) and Francis et al.'s (2004) recommendations for conducting research testing TPB, an elicitation study was completed through pen and paper questionnaires. The primary purpose of this study was to determine the perceived negative and positive beliefs related to, the people or normative group relevant to, and the factors perceived to influence adopting mothering and career roles.

2.3.1 Participants.

Participants consisted of 22 female undergraduates enrolled in a 100-level psychology course. Although men must also make decisions regarding intentions to or not to parent, data inclusion was restricted to women in both samples used for the current research. Specifically, these exclusionary criteria are predicated on the finding that men and women's experiences of parenting and career decisions and their consequences differ widely (Kemkes-Grottenhaler, 2005; Williams et al., 2006) as well as the finding that women are more likely to have made a decision about their future family roles whereas men are more likely to have thought about their future family roles without committing to an intended behaviour (Friedman & Weisbrod, 2005). Inclusion was also limited to women who were childfree (i.e., as they may not have made a firm decision about parenting whereas parents have *already* made this commitment) and between the ages of 18 to 29 years, a range that is consistent with Society for the Study of Emerging Adulthood's (2016) definition of this group of young adults and is within a range where the decision to have children is less likely to be impacted by the *ability* to have children (i.e., due to fertility concerns).

There are, however, some potential limitations of the selected sample. For example, this group of women—who are from a mid-western university—may not broadly represent Canadian women. Of particular consideration is the possibility of this group of women being potentially more conservative than women who reside in more populated areas (Gamio, 2016; Hendrickson, 2012). However, based on 2001 census data (Statistics Canada, 2005) the province of Saskatchewan has a reasonably similar proportion of Christian citizens (83%) and atheistic citizens (16%) relative to Canada as a whole (77% and 17%, respectively). A second potential concern with respect to this sample is that women enrolled in university may be more likely to be career oriented, although this also increases the likelihood that there is more of an intersection

between mothering and career roles—which was central to the current research given that women pursuing higher education are of particular interest because the pursuit of education often occurs during the most fertile years of a woman's life and that more highly educated women are also more likely to postpone motherhood. Nevertheless, it is important to note that the results of the study may be less likely to apply to women who do not express any intentions to pursue higher education or who are less career oriented.

2.3.2 Procedure.

After obtaining ethics approval from the University of Saskatchewan's Research Ethics Board (see Appendix A), the invitation to participate in the elicitation questionnaire was posted on the Sona System participant recruitment website for the department of psychology's research participant pool. Potential participants read a brief study description and determined whether or not they wanted to participate in the study; those who wanted to participate selected from various timeslot options. Participants arrived at the designated time and university classroom and were provided with a consent form (Appendix B), to sign and one to keep for their personal records. Participants completed the questionnaire package (Appendix C) and then were provided with a debriefing form (Appendix D). No identifying information was attached to their questionnaires, and only student numbers were used to ensure participants could be reimbursed with one-bonus mark towards their 1-level psychology course in return for attendance at the appointed time (i.e., not dependent upon questionnaire completion). The study procedure generally required 20-30 min to complete. Sampling was discontinued when I deemed, in consultation with my research team, that no further categories or themes were being elicited (i.e., when the data had reached saturation). Data were subjected to content analyses. An independent rater was provided with the theme names and their descriptions. The rater then reviewed the content of participants' responses, noting whether or not the participants' comments were consistent with the theme names and their descriptions. The independent rater's judgments were then compared to my ratings for reliability purposes. Questions for the main study were then created to reflect each of the themes identified.

2.3.3 Measures.

Given that the purpose of the elicitation phase was to determine the most salient positive and negative mothering and career beliefs young women hold in order to generate belief-based measures of attitudes, subjective norms, and perceived control, this study used open-ended

questions. Open-ended questions allow for participants to freely provide responses that reflect their own personal beliefs without inadvertently biasing those beliefs, allowing for the spontaneous emergence of relevant beliefs (or a lack thereof, which in itself may be informative). Scale questions related to career and mothering intentions and salience were also included to provide direct measures of attitudes, subjective norms, and perceived control. Refer to Appendix C for a copy of the questionnaire.

2.3.3.1 Intentions to parent.

To ensure the sample providing data in the elicitation phase represented the target population (i.e., young, nulliparous women, pursuing higher education), the participants were asked to identify their reproductive and career intentions. Intentions were assessed using three types of questions based on Ajzen's (2006) and Montaño and Kasprzyk's (2008) recommendations for conducting TPB research. First, participants indicated their intentions by responding "yes" or "no" to the following two questions: "*do you intend to be a mother?*" and "*do you intend have a career?*" To ensure convergence of these reports, participants were asked to rate the likelihood of mothering and the likelihood of having a career on a 7-point scale (1 = *very likely* to 7 = *very unlikely*). Using another 7-point scale (1 = *strongly agree* to 7 = *strongly disagree*), participants were also asked to rate their agreement with the following items: "*I plan to be a mother,*" and "*I plan to have a career.*"

2.3.3.2 Parenting and career salience.

Seven questions were included to assess mothering and career salience. Using a 10-point Likert-type scale (*1 = not at all important* to *10 = very important*), participants were asked three questions in order to estimate the importance of having a career, motherhood, and becoming a mother *and* having a career. These items allowed for an overall estimate of the value of each role and, because each item is rated using the same scale, these ratings were directly comparable. Two additional sets of two 10-point Likert-type scale (*1 = strongly agree* to *10 = strong disagree*) questions were included to assess role salience. Participants were asked about the priority of mothering or having a career as a life goal and their perceptions of success if they could become a mother or have a career.

2.3.3.3 Open-ended questions.

Questions were created to elicit the specific beliefs and relevant norms potentially influencing mothering intentions. Specifically, participants were asked to identify their perceived

(a) positive and negative consequences of mothering and having a career, (b) important individuals in their social normative groups who would approve and disapprove of mothering or having a career, and (c) potential factors that may facilitate or impede mothering or having a career. The development of these questions was guided by Ajzen's (2006) and Montaño and Kasprzyk's (2008) recommended approach to assessing relevant aspects of TPB constructs. Participants were encouraged to provide as many responses as they could generate for each question.

2.3.3.4 Mothering and career attitudes.

Following from Ajzen's (2006) and Montaño and Kasprzyk's (2008) TPB elicitation study construction guidelines and based on Osgood, Suci, and Tennenbaum's (1957) semantic differential scale method, a number of items were constructed for use in the elicitation study to directly assess participants' overall attitudes towards both mothering and having a career. Specifically, participants were asked to rate valenced items reflecting attitudes towards mothering or having a career using 7-point scales anchored by semantic opposites, thereby providing direct measurement of attitudes. Further, as Ajzen (2006) suggests, these items reflected both instrumental beliefs about the behaviours (e.g., *valuable – worthless*) as well as experiential beliefs about the behaviours (e.g., *pleasant – unpleasant*). Examples of items include, "Becoming a mother would be…*beneficial* = 1 or *harmful* = 7" and "Having a career would be…*unenjoyable* = 1 or *enjoyable* = 7. Positive and negative semantic anchors were counterbalanced as a precaution against response set.

2.3.3.5 Demographic information.

To ensure that the participants who responded in the elicitation phase matched basic characteristics of the sample that was recruited for the main study (e.g., nulliparous women aged 18-29), some basic demographic information was collected in the elicitation phase, including age, gender, parenthood status, and relationship status. Relationship status is considered a potential covariate because married women may be more likely to have made mothering decisions and may have greater pronatalist views given that reproduction is one of the primary ideologies of marriage (Day, 2005).

2.3.4 Data Analysis Method.

Qualitative analyses were first conducted for the elicitation phase data in order to develop themes and guide the development of items used in the quantitative assessment of mothering and

career intentions in the main study. Although the data from the elicitation study was primarily collected to inform content for belief-based items measuring of TPB attitudes, subjective norms, and perceived control in the main study, these data were also examined independently. That is, outside of this primary function, the elicitation data may provide insights into the relevant and irrelevant attitudes, subjective norms, and perceived control beliefs that women use to inform their decision-making process.

I conducted a content analysis to identify the salient beliefs expressed by the sample of young women across the 12-belief questions. The number of responses participants could generate for each of these open-ended questions was not limited. Women identified numerous beliefs and referents, responding in sentence, list, or combined sentence-list format. I typed all of the responses provided by young women. Responses were subjected to content analyses. Specifically, I reviewed the responses to generate initial ideas, data were systematically extracted, and then labels and descriptions were created to reflect the dominant themes I identified. The categories were reviewed to ensure they reflected the content of the extracts. Initial themes with fewer than 20% of participant responses were reviewed again and, where appropriate, themes were amalgamated (e.g., mental health and physical health were collapsed into a "health" theme for mothering perceived control). This process was repeated for each of the mothering and career attitudes, subjective norms, and perceived control questions.

Ajzen and Klobas (2013) describe potential difficulties with item selection based on researcher's biased knowledge—knowledge that may not be available to the population of interest and, therefore, inaccurate when included as part of the beliefs being assessed. The elicitation study is necessary to overcome the potential biased selection of factors and ensure that the data are more likely to reflect the populations' beliefs and available knowledge. However, selection of themes and their descriptions are not impartial processes and are potentially subject to the researcher's biases.

To ensure the formation of themes was not heavily biased by my preconceptions of relevant factors derived from the research literature, these themes and the data were also reviewed collaboratively with the research supervisor. An objective cut-point was also applied to theme selection: The themes that were included were those that occurred with a minimum frequency of 20% (i.e., 4 of 22) of the respondents. For example, responses about various (and differing) fertility-related concerns as barriers to mothering were recorded by only three

participants. As such, despite my own potential bias towards inclusion of fertility-related items in light of the nature of the current study and research literature, this was grouped more generally under "health" along with young women's comments about other aspects of physical and emotional wellbeing.

2.4 Results

2.4.1 Sample characteristics.

Of 25 participants, 22 participants' data met inclusion criteria for the study (i.e., age, gender, without fertility concerns, nulliparous). Participants were women, ages 18-29 years (M = 20.64, Mdn = 19.50, SD = 2.70), enrolled in studies at a Western Canadian University. Participants were most commonly enrolled in the college of arts and sciences but some identified as belonging to various other colleges (i.e., kinesiology, business, agriculture and bioresources). Eight women indicated that they were single, 12 were in a relationship, and two were cohabitating or married.

All but two participants expressed intentions to become mothers in the future and all of the participants expressed intentions to pursue careers. Paired samples t tests were conducted to compare role intentions ratings and to compare role salience ratings. Young women's mothering intentions (M = 37.91, SD = 13.96) were lower than their career intentions (M = 40.36, SD = 14.36), $t(21) = -0.82$, $p = .02$. However, the mothering role (M = 7.77, SD = 2.22) and the career role (M = 8.73, SD =2.10) appear to be considered similarly rated in importance to this group of women, $t(21) = 1.73$, $p = .10$.

2.4.2 Inter-rater reliability.

As noted above, the primary researcher reviewed the content of participants' spontaneously generated responses for each the 12-open-ended mothering and career attitudinal, subjective norms, and perceived control questions. I then provided a copy of the transcribed data and themes to a doctoral-level psychology colleague for review. This second rater determined whether or not each of the participants' statements was consistent with the described themes. Reliabilities for the raters' coding of each of the themes were assessed using Cohen's kappa (K), which measures the extent to which raters agree. For interpreting the quality of agreement, Cohen's (1960) guidelines for K values were applied, which coincide with Altman's (1991) recommendation that values between .60-.80 constitute good agreement and values of .80-1.00 constitute very good agreement. In the present study, most items had K values above 0.80;

however, *K* values can be impacted by relatively little disagreement when the prevalence of a response is low (see Viera & Garrett, 2005, for a discussion about low *K* values despite high levels of observed agreement, as is the case for some items in the current study). Consequently, as recommended by McHugh (2012), percent agreement is also reported. See Tables 2.1 through 2.6 for the names and descriptions of the themes, excerpts of the young women's responses, inter-rater reliability (kappa) values, percent agreement between raters, and percent of participants who reported each theme for the mothering and career attitudes, subjective norms, and perceived control questions.

2.4.3 Item selection for quantitative study.

All of the themes identified by the primary researcher were selected for inclusion in the main study as all had greater than moderate (i.e., $K = .60$) agreement, greater than 90.9% percent agreement between raters, and were reported by at least 20% of the elicitation study sample. However, for the perceived control beliefs identified for both mothering and career roles, some facilitating factors overlapped with factors identified as barriers. Given the redundancy in beliefs and the rating scale structure of questions in the main study (i.e., allowing for individuals to express the degree of their agreement or disagreement with the belief), where themes overlapped only one item was created to reflect each perceived control factor (i.e., women identified social support or lack thereof, financial stability or lack thereof, good health or lack thereof as potential facilitators and barriers to becoming mothers while they identified social support or lack thereof, financial stability or lack thereof, children or lack thereof, education or lack thereof as potential facilitators and barriers to having careers).

2.4.4 Content analyses.

2.4.4.1 Mothering and career attitudes.

As described above, the mothering beliefs that underlie attitudes were elicited by asking about the advantages and disadvantages of parenting in two separate questions. Women identified a nearly equal number of advantages as disadvantages of parenting. However, women were expected to identify more positive (rewards) than negative (costs) factors associated with becoming a mother and pursuing a career (Hypothesis 1A). Consistent with past research, women described a number of advantages of mothering (see Table 2.1). Women also recorded a number of perceived disadvantages. However, contrary to the hypothesis, women identified an approximately equal number of advantages and disadvantages. Women most often cited maternal

Table 2.1. ***Mothering attitudinal themes, descriptions, examples, inter-rater reliability values, and percentage of sample reported.***

Mothering Attitudinal Themes	Kappa Value	% Agreement	Description	Examples	% Reported
Advantage – Building a family	1.00	100	creating or building a family; family support; increasing familial bonds	*to build a family unit/support group; get to make a family; having children is the best way to establish a family; always have loved ones around you*	36.4
Advantage – Personal rewards	1.00	100	sense of purpose; obtain 'status' of being a mother, fun or enjoyment, feeling needed	*playing with a cute baby; becoming a mother is rewarding and seen as valued; seeing someone grow; give a sense of purpose to life outside of my job*	77.3
Advantage – Sense of achievement	1.00	100	sense of achievement, accomplishment, or pride	*feeling you accomplished something by raising someone; achieve a lifetime goal of raising a child; provides moments of pride*	50.0
Advantage – Family continuity	0.88	95.5	fulfilling biological drive; reproducing, passing on genes and/or family name; grandchildren; care in old age	*pass on my genes; grandkids; way to invest in our own lives in that we pass on a part of ourselves in our children; carry on a family name and set of genes*	27.3
Advantage – Maternal bond	0.74	90.9	bonding; companionship; connection with child; love towards and from child, feeling needed and depended upon	*able to share your love with someone; provides a relationship that is like no other; makes you feel needed; bonding; being a primary caregiver*	77.3
Advantage – Personal growth	1.00	100	self-discovery; positive personal changes (e.g., positive emotional changes, maturity)	*discovering things about myself; embracing a more sensitive emotional aspect of life; opportunity to grow as a person; provides a whole different outlook*	50.0
Disadvantage – Financial strain	1.00	100	financial costs/expenses; monetary concerns	*children are expensive; adequate care costs money; all of the money goes towards baby necessities*	72.7
Disadvantage – Stress	1.00	100	emotionally stressful; exhausting	*the amount of stress associated with being a mother; very exhausting; cause a person to worry more*	59.1
Disadvantage – Career impact	1.00	100	negative career impact, time away from work, difficulty balancing work role	*less time to work; hard to have a career and be a mother; would have to stay home at first and could hurt my work or delay ability to get a good job*	40.9
Disadvantage – Relationship impact	1.00	100	changes to relationships with spouse, friends, family, and social activities	*relationship with spouse and non-mother friends will change; don't get to go out with friends much*	40.9
Disadvantage – Time consuming	0.81	90.9	decreased time for self; requires time commitment	*time consuming; dedicating your life and time to someone else; less time for yourself*	59.1
Disadvantage – Negative child outcomes	0.90	95.5	negative child behaviours or outcomes	*if I had children with additions; whether or not you're raising your child to be successful, loving, or respectful*	36.4
Disadvantage – Responsibility	0.65	95.5	childcare activities and requirements, personal restrictions	*you have to deal with poop, snot, and drool; constantly cleaning up after them; responsibility for others; limits on personal freedom*	90.9

Note. All kappa values were significant at $p \leq .001$.

Table 2.2. ***Mothering subjective norms themes, descriptions, examples, inter-rater reliability values, and percentage of sample reported.***

Mothering Subjective Norms	Kappa Value	% Agreement	Examples	% Reported
Approve – Mother	1.00	100	*mother; parents*	81.8
Approve – Father	1.00	100	*father; parents*	68.2
Approve – Family (other than parents)	1.00	100	*siblings; grandparents; aunts; uncles; cousins; in-laws*	86.4
Approve – Friends	1.00	100	*friends; peers*	68.2
Approve – Society	1.00	100	*church; community; society in general; mothers in general*	50.0
Approve – Everyone	1.00	100	*most people; everyone*	22.7
Disapprove – Friends	1.00	100	*friends; peers*	22.7
Disapprove – Family	1.00	100	*parents; siblings; grandparents; aunts; uncles; cousins; in-laws*	27.3
Disapprove – No one	1.00	100	*no one; can't think of anyone who would disapprove*	45.5

Note. All kappa values were significant at $p \leq .001$.

Table 2.3. ***Mothering perceived control themes, descriptions, examples, inter-rater reliability values, and percentage of sample reported.***

Mothering Perceived Behavioural Control	Kappa Value	% Agreement	Description	Examples	% Reported
Easier – Financial stability	1.00	100	having a career; having money to support children; no financial worries; no debt	*well paid career; career would take some stress off; having a stable living (a job, economic stability)*	77.3
Easier – Stable relationship	1.00	100	having a committed partner or husband; being married	*if I was married; being in the right relationship; stable and healthy relationship*	81.8
Easier – No other time commitments	1.00	100	no career; no school; no other time demands; flexibility with other demands	*not being in school; being able to leave work; if my employer provided flexibility in working hours*	36.4
Easier – Support system	1.00	100	support from family and friends	*good support system of a husband, family, and friends; family close by; if living close to my mother*	54.5
Easier – Good health	1.00	100	emotional and/or physical health	*being healthy; less stress; if I can have babies; being ready emotionally*	27.3
Easier – Achieved other goals	1.00	100	travelled; have home; settled	*have a nice home; had time to travel; settled down in city in my own place*	40.9
Difficult – Lack of partner	1.00	100	being single; no spousal support	*if I didn't have a husband or long term boyfriend; not being married; if partner leaves you*	72.7
Difficult – Financial concerns	1.00	100	no income; debt; being poor; no career	*struggling with bills; unemployed; low income job*	68.1
Difficult – Lack of support	1.00	100	no support from family or friends	*no family around; family members don't approve*	40.9
Difficult – Unstable lifestyle/immaturity	1.00	100	not having a stable home; lack of parenting knowledge; lacking desire to be settled and have kids yet	*nowhere to live; lack of resources; being too young; don't want to be a mother yet; no childcare; a lifestyle that would be unhealthy for a baby*	45.5
Difficult – Poor health	1.00	100	poor physical and/or emotional health	*unhealthy; if I was suffering from depression; bad health; disabilities*	36.4

Note. All kappa values were significant at $p \leq .001$.

Table 2.4. ***Career attitudinal themes, descriptions, examples, inter-rater reliability values, and percentage of sample reported.***

Career Attitudinal Themes	Kappa Value	% Agreement	Description	Examples	% Reported
Advantage – Financial wellbeing	1.00	100	stability; providing for family; having money to achieve other goals	*money and financial wellbeing; good pay; steady income; wouldn't be stressed or in debt*	90.9
Advantage – Personal achievement	1.00	100	successfulness; accomplishment; achievement	*sense of accomplishment; position of respect; feeling like education paid off; being successful; respect*	54.5
Advantage – Contributing to society	1.00	100	helping people; sharing knowledge; being part of a community or society	*being able to help people; purpose in life; contributing member of society; gives meaning*	45.5
Advantage – Social rewards	0.91	95.5	social life; meeting people; building relationships	*meet people with similar interests; broadens social circle; builds relationships; make good friends*	40.9
Advantage – Personal growth	0.90	95.5	satisfaction; enjoyment; purpose; gaining skills; improving personal characteristics	*brings about change and independence; life skills; gain self-confidence; gain life skills*	63.6
Disadvantage – Relationship changes	1.00	100	time away from family and loved ones	*time away from family; take you to a place away from the people you love; miss your child's memories as they grow up; no time for friends*	72.7
Disadvantage – Reduced leisure time	1.00	100	work being time consuming; no time for self or to relax; less freedom	*not enough time to relax; less free time; less leisure time; bringing your work home; time consuming*	72.7
Disadvantage – Stress	1.00	100	burnout; stressful; unsatisfied; unhappy; dislike work	*lose compassionate side; work might affect health/emotions; careers add stress to people's lives*	45.5

Note. All kappa values were significant at $p \leq .001$.

Table 2.5. ***Career subjective norms themes, descriptions, examples, inter-rater reliability values, and percentage of sample reported.***

Career Subjective Norms	Kappa Value	% Agreement	Examples	% Reported
Approve – Mother	1.00	100	*mother; parents*	63.6
Approve – Father	1.00	100	*father; parents*	59.1
Approve – Family (other than parents)	1.00	100	*siblings; grandparents; aunts; uncles; cousins; in-laws*	77.3
Approve – Friends	1.00	100	*friends; peers*	63.6
Approve – Society	1.00	100	*church; community; society in general; mothers in general; teachers*	31.8
Approve – Everyone	1.00	100	*most people; everyone*	27.3
Disapprove – No one	1.00	100	*no one; can't think of anyone; none*	72.7

Note. All kappa values were significant at $p \leq .001$.

Table 2.6. ***Career perceived behavioural control themes, descriptions, examples, inter-rater reliability values, and percentage of sample reported.***

Career Perceived Behavioural Control	Kappa Value	% Agreement	Description	Examples	% Reported
Easier – No financial concerns	1.00	100	no money concerns, particularly during school/training	*if didn't have to worry about money; enough money to get through university; financial support*	54.5
Easier – Education/Obtaining degree	1.00	100	obtaining a good education; good grades; completing studies	*good education; completing education; get a degree; getting good grades*	59.1
Easier – Childlessness	1.00	100	no children until after education is complete and/or after career is stable	*if I didn't have children until after I got my career; not having kids until the job is settle and stable; no children so you can focus on your career*	22.7
Easier – Social support	1.00	100	social and emotional support from family and friends	*emotional support when I feel like giving up; supportive husband; supportive family and friends*	50.0
Difficult – Having children	1.00	100	being pregnant; having children	*having children before completing a degree; if I was a mother; having a family too early; children who need you at home*	63.6
Difficult – Financial concerns	1.00	100	debt; worries about money	*student debt; worried about money for food and rent; can't afford tuition; have to work and go to school; living condition is poor*	27.3
Difficult – Lack of education	0.90	95.5	no education; no degree	*unfinished education; not completing university; poor education; lack of required knowledge*	36.4
Difficult – Lack social support	1.00	100	others not approving or not supportive of career choice	*parents don't approve; friends don't approve; no support from people; people disagree with my career choice*	22.7

Note. All kappa values were significant at $p \leq .001$.

bond (77.3%) and personal reward (77.3%) factors as perceived advantages to becoming mothers whereas they also most frequently reported responsibility (90.9%) and financial strain (72.7%) concerns as perceived disadvantages to becoming mothers.

Interestingly, compared to mothering, when women were asked about the advantages and disadvantages of careers, they had greater difficulty providing a broad range of rewards *and* costs. The women repeatedly referred to money and financial wellbeing; however, for most young women, if mothering or families were addressed they appeared to be primarily considered in so much as careers *positively* impacted mothering and family roles through financial means. Interestingly, in the context of careers, young women appeared to be slightly more attuned to potential career and mothering—or at least family—role conflict, with most comments focusing primarily on the family time-related costs of careers.

2.4.4.2 Mothering and career subjective norms.

Perhaps not unsurprisingly, young women identified a number of different potential social sources of approval for mothering or having careers. In contrast, they identified few sources of disapproval for mothering or having careers. As anticipated (Hypothesis 1B), many of the young women specifically identified their mothers (and to a lesser degree their fathers), and many women simply referred to their "parents" as people who would approve of becoming a mother. Although Table 2.2 identifies a number of other references, only two participants considered their partners/spouses as potentially relevant referents.

Young women identified people and groups who would approve of them having careers that were similar to people and groups they identified as likely to approve of them becoming mothers. Again, very few women considered their partners as relevant for approving (or disapproving) of careers and, quite infrequently, women reported other individuals or groups as important (e.g., educators, other successful mothers). As hypothesized (Hypothesis 1C), women had difficulties identifying people and/or groups who they thought would disapprove of them having careers. They also struggled to identify people and groups who they anticipated would be disapproving of mothering.

2.4.4.3 Mothering and career perceived behavioural control.

Finally, in the elicitation study young women were asked to describe factors they perceived could be aids versus those they perceived could be barriers to becoming a mother or having a career. Few women identified having a career as a barrier to becoming mothers. Instead,

the theme of careers as a positive factor (as was described in the advantages section of the form) also arose in the context of facilitators of mothering. Contrary to expectations, given the work-family conflict literature, some young women anticipated that having a career would make it *easier* to become a mother. For the most part, barriers were the opposites of facilitators. As anticipated (Hypothesis 1D), few perceived control factors pertaining to fertility (e.g., age, health) were identified.

Besides education, social supports enabling women to pursue a career, money, and having children, perceived facilitators and barriers of careers appeared to be fairly individualistic for these women and barriers appeared particularly difficult for participants to generate. Only two individuals wrote about the potential demands of a job and its potential impact on their family life.

2.5 Discussion

The primary purpose of this study was to elicit the beliefs relevant to young women's mothering and career intentions in order to inform the content of items to be used in a quantitative study examining the application of the theory of planned behaviour to mothering and career intentions. However, this study also provided rich insight into women's beliefs about what factors may be relevant to their intentions and which factors do not appear to have any bearing on these young women's early mothering and career intentions. The current results, as discussed below, support the utility of an elicitation study and highlight the potential drawbacks of relying on factors identified in the literature.

As outlined above, women's responses were generally consistent with my hypotheses, with one notable exception: Young women in the current sample did not solely focus on the potential positive aspects of becoming mothers; rather, they also identified many potential negative aspects of becoming mothers. Although this may not reflect the degree to which these young women believe in or even the extent to which they might prioritize perceived advantages or disadvantages of becoming mothers in their decision making, it does suggest that women are not simply focused on positive aspects of mothering and that they are *aware* of the potential drawbacks associated with the mothering role. Nevertheless, while young women can acknowledge the potential disadvantages to motherhood, it is still unclear whether or not they believe that these are important factors that apply to them in their personal decision-making process. Indeed, awareness of disadvantages does not necessarily dictate belief about their

importance: In her study examining young women's perceptions of parenting, Lawson (2004) found young adults held more positive parenting beliefs and did not appear to emphasize instrumental costs of parenthood. Indeed, only isolation—a negative social change also identified by young women in the current study—was considered important to young women's intentions. The extent to which young women in the current study rate such costs as relevant to them and whether or not this varies based on the degree of career salience or their career intentions may be of potential relevance when examining mothering intentions.

It is possible the inclusion of items related to careers in the elicitation study could have artificially increased women's awareness of the impact of careers on mothering and could have drawn further attention to other possible disadvantages associated with the career role. Although some women were aware of the impact of careers on the mothering role (e.g., father may disapprove of a career because he may think it would reduce her ability to be a good mother, careers can conflict with family responsibilities and time, concerns about leaving children in daycare may reduce ability to have a career), this pattern of findings was not reciprocal: Women did not also identify more beliefs about the impact of mothering- and family-related factors on careers—despite the same potential for bias. Rather, women expressed fairly positive beliefs about careers and even suggested careers could benefit the mothering role. The lack of responses suggesting awareness of the potential competing factors associated with dual mothering and career roles—despite the opportunity inherent in the study design for priming women to consider how these roles intersect—was further supported by women's perceived control responses: Women generally did not report careers or work-related considerations (e.g., maternity leave, work family-sick leave policy, work time commitments/demands) as potential barriers to mothering; rather, they tended to report that careers would be facilitators of becoming a mother by providing the financial security they believe is necessary to start a family.

Despite the simultaneous elicitation procedure for mothering and career beliefs, a number of issues related to combining career and mothering roles were possibly not important or within these young women's awareness. Their responses tended to focus on more positive beliefs about, and their responses lacked consistent and nuanced concerns with respect to, pursuing both roles. For example, none of the young women identified concerns about how careers could reduce mothers' perceived competence in their mothering role and how mothering could reduce women's perceived competence in their career role. Some of the young women readily

acknowledged careers can contribute to difficulties with the mothering role and vice versa; yet, overall, very few women reported beliefs about the many nuanced ways in which these roles may conflict (e.g., bias in terms of employers hiring practices, work policies pertaining to family planning and childcare, impact of time away for work on maternal bond, social perceptions of dual-role women, need to establish a career prior to maternity leave potentially increasing maternal age at first birth and increasing risk of fertility concerns).

Their responses—or more specifically their lack thereof—could have occurred for various reasons. For example, the information obtained in elicitation methodology can be limited by the articulation capabilities of the respondents; however, with university students, it is likely that this is a less relevant challenge than might be observed in elicitation studies with other populations of interest when studying fertility and careers. Alternatively, it could be that these young women might have been less willing or motivated to share information in the study as the compensation for participation may not inspire participants to put in exceptional effort when responding. Nevertheless, many of the respondents in the current study provided multiple responses to each question. There is also the possibility that the elicitation methodology may not provide sufficient opportunity to evoke all relevant factors spontaneously and to record the complexity of relationships between roles and identified factors within a limited timeframe. It is possible that a focus-group format could elicit more beliefs that are important; however, there is the possibility of some beliefs would have then been endorsed that would not otherwise be in the awareness of or considered by young women without the influence of others. Finally, the lack of nuanced responses in the elicitation study could suggest the young university-aged women in this sample may possess overly optimistic views about combining mothering and career roles that is not consistent with the large body of literature detailing the various complications women who have pursued dual roles have experienced.

Although women identified a number of positive beliefs related to having careers, such as financial wellbeing, achievement, social rewards, and personal growth, other factors that were rated by young women as very important in previous research (Konrad et al., 2000, Rottinghaus & Zytowski, 2006) were not identified, such as prestige, power, enjoyment, mental challenge, and work environment. It is possible that without prompting from scale items—such as items on the work values inventory in Rottinghaus and Zytowski's (2006) study—these factors may be viewed as less important. Alternatively, such factors may be relatively unknown to participants

given their age and experience—or lack thereof—in a career. Regardless of the reason(s) for their omission, the lack of congruence between the factors elicited in the current study and the factors identified as important in previous research using validated scales lends support for Ajzen's (2006) contention that an elicitation study is necessary to ensure only beliefs relevant to the population of interest are included in TPB research. Indeed, in contrast to previous literature, it is possible that the young women in this sample might consider these a priori determined factors (e.g., those identified by others and included in well-established scales) to be important *only* when presented with them, but the current results indicated these literature-derived factors were not as salient to this sample of women. Rather, as noted above, such factors may be irrelevant without prompting and, therefore, may not contribute meaningfully to intentions in more ordinary decision-making situations (e.g., young women's intention formation that occurs outside of research contexts), leading to questions about the ecological validity of intentions research that does not include an elicitation phase to help select factors that may be more important to the population of interest.

As anticipated, women identified their mothers, followed by their parents more broadly, most frequently when asked about important approving and disapproving social referents—and this pattern was observed for both mothering and career intentions. Moreover, although women could identify various social referents who might disapprove of them becoming mothers, they generally had difficulty identifying individuals or groups who might disapprove of them pursuing careers. It is possible that the lack of disapproving individuals for women's careers pursuits may be because women are increasingly emphasizing personal development; however, the lack of such referents may also be because these young women represent a subset of individuals who have chosen to attend post-secondary education, who may place greater emphasis on careers, and who may not know individuals who disapprove of such pursuits relative to their counterparts who may have chosen not to pursue further education because of the influence of their disapproving social referents. Indeed, such an explanation is consistent with Akande's (2009) finding that women who pursue careers report greater perceived social support than those who do not.

Young women are frequently forming career and mothering intentions (e.g., choosing to postpone parenthood while pursuing education and/or careers) without the requisite knowledge to make fully informed decisions. Indeed, Daniluk, Koert, and Cheung (2012) have noted that

young women generally have poor fertility awareness and express intentions to postpone mothering, choosing to rely on artificial reproductive technologies. As such, it was anticipated that the young women in this study would identify few perceived control factors related to fertility (i.e., fertility concerns as barriers to mothering). Only two of 22 women referred to any form of fertility concerns as potential barriers to becoming mothers. Moreover, with such a low rate of expressed concerns, any more nuanced beliefs related to various fertility-relevant information were not expressed, not available to the young women, or do not meaningfully contribute to intentions. The results of this study suggest either that women feel that these factors are not important or that women are lacking sufficient knowledge. Given Williamson et al.'s (2014) findings that women change their intentions when given accurate fertility information, it seems that the latter is a more plausible explanation. Consequently, my results demonstrate the need for improved education: In light of changing family formation patterns and inadequate fertility awareness, it seems necessary to provide young women with accurate fertility information at an early age—that is, at a time in their development while they are still forming mothering- and career-relevant beliefs and role intentions and when they are most likely to be making decisions that may negatively impact or limit their future role options.

Chapter 3. Main Study Hypotheses

A number of a priori hypotheses pertaining to the theory of planned behaviour (TPB) and expanded-TPB models as well as each of the other primary variables of interest (i.e., role salience, anticipated work-family conflict [WFC], gender role traits) are described below. Although many research- and theory-informed hypotheses can be specified based on the above review of the various relevant literatures, the hypotheses presented here attempt to focus on the main objectives of the current research: (a) examining the appropriateness of the basic and expanded TPB models and (b) assessing the relevance of additional variables to the prediction of intentions over and above the core constructs proposed by the TPB.

Given that one of the main objectives of the proposed research was to examine the applicability of the TPB and expanded models of the TPB to mothering and career intentions, the main hypotheses that relate to tests of the proposed models are specified below. The predictive ability of the components of the TPB was also compared to the predictive ability of separate measures of other relevant characteristics identified in the literature (e.g., role salience, gender-role traits, anticipated work-family conflict [WFC]), consequently allowing Bachrach and Morgan's (2013) assertion (i.e., that the TPB does not adequately capture all relevant situational and background factors) and Ajzen and Klobas's (2013) counterargument (i.e., that relevant situational and background factors are accounted for in terms of their influence on individuals' attitudes) to be tested. Finally, although I measured a range of variables in the current study that were derived from the literature that could be potentially relevant to life-role decisions and although a number of hypotheses could have been generated from previous literature, for the sake of clarity and focus, not all of these potential relationships were examined.

3.1 Role Intentions

1A) The majority of young women in the current study will express career intentions.

1B) More women will express intentions to become mothers than not.

1C) The majority of women will express intentions to pursue both roles.

1D) Women who express higher levels of mothering intentions are expected to express intentions to have children at an earlier age; however, women who express greater career intentions are expected to express greater intentions to delay having children.

1E) Intentions and role salience will be significantly positively correlated: Greater intentions to pursue motherhood will be associated with greater mothering role

salience and greater intentions to pursue careers will be associated with greater career salience.

1F) Role intentions and gender-role traits will be significantly positively correlated: Greater levels of expressive traits will predict greater mothering intentions. Greater levels of instrumental traits will predict greater career intentions.

1G) Women who intend to be childfree will report more instrumental and fewer expressive traits than women who intend to have children.

3.2 Role Salience

2A) Role salience in one role will be negatively correlated with role salience in another.

2B) Attitudes towards life-roles will be positively associated with their respective role salience.

2C) Role salience in one domain (e.g., careers) will be associated with lower levels of positive attitudes with respect to the other role domain (e.g., mothering).

2D) Greater career-role salience will be associated with greater intentions to postpone reproduction (i.e., greater age at first intended birth), to have fewer children, to be childfree, and to lower anticipated infertility-related distress. Opposite relationships will be expected for those with greater mothering-role salience (i.e., earlier age at first birth, more children, less likely to be childfree, and greater anticipated infertility-related distress).

2E) Women with greater mothering-role salience will be higher in expressive traits. Greater career-role salience will be associated with greater instrumental traits. Greater dual-role salience will be associated with greater expressive and instrumental traits.

2F) Young women whose role salience is high for both roles will report the highest levels of anticipated WFC. Women who highly value only one role (i.e., either the mothering or the career role) will express less anticipated WFC. Similar differences across salience groups for work-to-family and family-to-work conflict are anticipated.

3.3 Basic TPB Model

It is anticipated that the TPB will be a useful model to predict both mothering and career intentions. Importantly, as becoming a mother and having a career are not completely volitional

behaviours, the relationships between PBC and roles intentions are expected to be significant, providing support for TPB over the theory of reasoned action. Based on the TPB and previous research findings, the following hypotheses were tested:

3A) Each of the hypothesized direct paths between TPB constructs and mothering intentions will be significant and positive.

3B) Each of the hypothesized direct paths between TPB constructs and career intentions will be significant and positive.

3C) Attitudes will be the strongest predictors of intentions towards the intended behaviour.

3.4 Expanded TPB Model

Although the basic TPB model as originally proposed by Ajzen (1985) is expected to adequately predict intentions to mother and intentions to have a career, expanded models, including attitudes, subjective norms, and perceived control relevant to other roles, were tested. Prior to testing the expanded models, the hypothesized relationships between career-related TPB constructs and mothering-related constructs, as specified below, were tested.

4A) It is anticipated that career TPB constructs and mothering TPB constructs will be meaningfully related: Each domain-specific belief-based (indirect) scale will be associated with its corresponding other-domain belief-based scale.

i. Mothering attitudes will be negatively associated with career attitudes, such that as the attitudes/valuing of one role increases, the valuing of the other role decreases.

ii. Women will express high levels of social pressure to engage in both roles and that those who perceive greater social pressure in one role domain will perceive greater pressure in the other role domain.

iii. Young women will also express higher levels of perceived control and those who express greater perceived control in one role domain will express greater perceived control in another role domain (i.e., consistent with superwomen role beliefs and poor fertility knowledge).

4B) The expanded TPB model for mothering intentions will provide better prediction of mothering intentions than the basic TPB model (i.e., account for a greater proportion of variance in mothering intentions). Career-role attitudes, subjective norms, and

perceived control will meaningfully contribute to the prediction of mothering intentions.

4C) The expanded TPB model for career intentions will provide better prediction of career intentions than the basic TPB model (i.e., account for a greater proportion of the variance in career intentions). Mothering-role attitudes, subjective norms, and perceived control will meaningfully contribute to the prediction of career intentions.

3.5 Specific Hypothesized Relationships for TPB Constructs and Items

Additional specific relationships, based on previous literature, were examined.

5A) Women who intend to have children will express more positive and fewer negative attitudes about mothering (i.e., higher overall attitudes), emphasizing perceived benefits over costs and the attitudes of women who do not intend to have children will be more negative. Women who intend to be childfree will have more positive attitudes towards careers relative to women who intend to be mothers.

5B) Particular subjective norm referents may be assigned more value. For mothering and career intentions, mothers are expected to be the most important social referent for young women.

5C) Higher perceived work-family conflict will be associated with lower perceived control for mothering and career intentions.

5D) Following from the TPB premise that attitudes encompass various beliefs about roles that contribute to understanding intentions, attitudes and literature-derived variables (e.g., salience, gender traits, and WFC) will share strong relationships; however, contrary to the TPB, and following from Mencarini et al.'s (2015) findings that other factors contribute both indirectly (i.e., through TPB constructs) and directly to intentions, these variables are also expected to uniquely contribute to role intentions as well (i.e., have predictive utility over and above the variance accounted for in intentions by TPB constructs).

Chapter 4. Main Study Method

4.1 Participants

A total of 542 individuals completed the survey. The same exclusionary criteria used in the elicitation study were applied in Study 2. Specifically, participation was limited to nulliparous women between the ages of 18 to 29 years who indicated that they had regular menses (i.e., 9 or more menses in the past 12 months). The sample was further reduced by excluding women who had graduated, who were employed at the university (e.g., professors, university staff), who were enrolled in graduate studies, or who were enrolled in professional degree programs (e.g., veterinary medicine, medicine, law) in order to keep the sample consistent with the women who participated in the elicitation study and whose beliefs informed the development of questionnaire items for the main study. Consequently, the remaining participants consisted of 349 women, ages 18 to 29 years, who were not parents, who had regular menses, and who were enrolled in undergraduate studies. A total of 149 participants were enrolled in a 100-level psychology course while the remainder (n = 200; 57.3%) were recruited from the university population across all fields of study.

4.1.1 Sample Characteristics

The 349 participants were women, ages 18-29 years (M = 20.95, Mdn = 20.00, SD = 2.99), enrolled in studies at a Western Canadian University. These women were predominantly white (83.4%). The second most common ethnic background was Asian (6.0%), followed by Aboriginal/First Nations (2.3%), South Asian (2.0%), Metis (1.4%), Black (1.4%), and other ethnic backgrounds (3.5%). The majority of these young women indicated that they were single (46.0%); however, 38.8% were in a committed relationship and 13.8% percent reported that they were either married or in common-law relationships. Of those who responded (N = 343), the majority of the participants identified as heterosexual (n = 317; 92.4%).

4.2 Procedure

Beliefs identified in the elicitation study that were spontaneously generated by a minimum of 20% of the elicitation sample were used to create questions designed to measure belief-based TPB constructs. After constructing the survey questions, the researcher received approval from the University of Saskatchewan's Research Ethics Board prior to proceeding with Study 2 (see Appendix A). As noted above, participants were recruited from two sources: students in 100-level psychology courses and students from the broader campus population. For

the 100-level psychology undergraduate sample, the main study used the same recruitment tool (i.e., Sona Systems) as described for Study 1. Student members of the broader campus community were recruited online with an advertisement listed on their main student portal website. In both cases, a brief description of the study was posted online and interested individuals were directed to read and print an online informed consent form (Appendices E and F). Participants in 100-level psychology courses participating through the Sona Systems website were compensated with one bonus mark towards their 100-level psychology course and the broader campus participants were offered the chance to win an on-campus gift certificate of $100. The survey package (see Appendices G to Q) for Study 2 was completed online and required approximately 30 minutes to complete for most participants.

4.3 Measures

In keeping with Ajzen's (2006) guidelines for conducting TPB research, the current study employed the use of both direct measures of attitudes, subjective norms, and perceived control as well as belief-based measures of attitudes, subjective norms, and perceived control developed from the elicitation study data.

4.3.1 Intentions to parent

As in Study 1, participants were asked to identify their reproductive and career intentions. Intentions were assessed using three types of questions based on Ajzen's (2006) recommendations for conducting TPB research. Following the format of the elicitation study, participants indicated their intentions to mother and intentions to have a career by responding to specific "yes" or "no" questions. They were then asked to rate: (a) the likelihood of engaging in each behaviour and (b) the extent of their agreement with statements regarding plans to engage in each behaviour on 7-point Likert-type scales. These two scale questions (i.e., likelihood and extent of agreement) were multiplied to create an overall estimate of intentions for mothering and careers with possible scores ranging from 1-49. Higher scores reflected greater intentions to engage in the role. Given that there were only two items on each of these scales, Cronbach's alphas were not appropriate. Instead the Spearman-Brown method of assessing reliability is less biased when scales include only two items (Eisinga, te Grotenhuis, & Pelzer, 2012). Please refer to Appendix H for role intentions questions and to Table 4.1 for a summary of all reliability coefficients for each scale.

4.3.2. Theory of planned behaviour scales

Direct and belief-based attitudinal, subjective norm, and perceived control TPB scales were created for each of the mothering and career roles. Items that comprises the direct scales for these factors were taken from the literature, as suggested by Ajzen (2006). Positive and negative belief-based items were selected for inclusion on the basis of the elicitation study results (see above). Specifically, items included were those reported by at least 20% of the elicitation study sample and had an inter-rater agreement of over 90%. For perceived control beliefs that entailed positive and negative framing of the same content, only one item was created (e.g., social

Table 4.1. ***Scale reliabilities.***

Scale	Reliability Coefficient
Mother direct	
Attitudes	.91
Subjective norms	.79
Perceived control	.79
Career direct	
Attitudes	.78
Subjective norms	.73
Perceived control	.80
Mother belief-based	
Attitudes	.86
Subjective norms	.89
Perceived control	.77
Career belief-based	
Attitudes	.72
Subjective norms	.72
Perceived control	.71[a]
Mothering intentions	.94[a]
Career intentions	.75[a]
Mothering salience	.92
Career salience	.81
Instrumental traits	.77
Expressive traits	.68
Work-family conflict	.76
Family to work interference	.81
Work to family interference	.83

Note. [a]Spearman-Brown coefficient. All other reliability coefficients are Cronbach's alpha.

support as a facilitator of achieving role and lack of social support as a barrier to achieving role was collapsed into one item).

4.3.2.1. Attitudes.

As in the elicitation study, items that were designed to be direct measures of attitudes were included in the main study questionnaire. The structure of these questions was as described above (i.e., asking participants about the extent to which they agreed with two descriptors, which were opposing adjectives, anchoring a 7-point Likert-type scale). After reverse scoring the necessary items, the items were then averaged to create overall direct attitudes scale scores for mothering and for career roles. Higher scores reflected greater positive attitudes towards mothering or career roles. Cronbach's alphas for the direct mothering attitudes scale and the direct career attitudes scale were considered to be good and satisfactory, respectively, with all items included.

Belief-based attitudes were also measured. For each relevant belief identified in the elicitation study, two items were generated in order to assess attitudes. Specifically, in keeping with TPB's tenet that attitudes are composed of beliefs and evaluations of those beliefs, Ajzen (2006) suggests that each belief should be assessed with two items targeting belief strength and evaluation of the belief. Consequently, participants were asked to rate belief strength in items presented with the following structure: "*becoming a mother would help me build a family*" or "*having a career would provide me with a sense of personal achievement."* These items were rated on a 7-point Likert-type scale (1 = *extremely likely* to 7 = *extremely unlikely*). Following each belief strength item, participants were asked to evaluate each outcome using another 7-point Likert-type rating scale (1 = *extremely bad* to 7 = *extremely good*). For example, participants were asked to evaluate these items: "*building a family is…*" and "*having a sense of personal achievement is…*". The structure of these items was replicated for each positive and negative belief selected for inclusion. Specifically, individual attitudes were created from belief strength response multiplied by each corresponding evaluation response. These individual attitudes scores were then averaged to create a belief-based attitudes scale for mothering intentions and a belief-based attitudes scale for career intentions. These scales had a possible range from 1-49, with higher scores reflecting more positive attitudes towards mothering or career roles. Cronbach's alpha for the belief-based mothering attitudes scale with all items was good. Cronbach's alpha

for belief-based career attitudes was also good when all scale items were included. Please refer to Table 4.1.

4.3.2.2 Subjective norms.

Direct subjective norms items were included for mothering and careers. Following Ajzen's (2006) recommendations, four direct subjective norm items were included to assess mothering subjective norms and four were included to assess career subjective norms. These questions asked the participants to rate their agreement with statements about people or groups of people's mothering opinions (e.g., "*the people in my life whose opinions I value think I should become a mother*") or behaviours (e.g., *"many women like me have careers*"). These items were rated on a 7-point Likert-type scale (1 = *strongly disagree* to 7 = *strongly agree*). For an overall measure of subjective norms, items were averaged to create scales that had a possible range from 1-7 with higher scores reflecting greater perceived social pressure to pursue mothering or career roles. Cronbach's alphas for the direct mothering subjective norms scale and direct careers subjective norms scale were satisfactory and good, respectively.

Belief-based subjective norms were measured using items selected for inclusion based on the elicitation study results. Like the procedure for attitudes, two items were generated for the main study for each relevant referent (i.e., individual or group) identified in the elicitation study. This process was designed to adhere to TPB's tenet that subjective norms consist of normative referents and the participants' motivation to comply with each normative referent. As such, Ajzen (2006) argues subjective norms must be assessed with items targeting normative belief strength and motivation to comply with the normative belief. Therefore, participants were asked to rate belief strength in the following way for each referent individual or group identified: "*my family thinks that I … mother*" or "*my father thinks that I … have a career*." These items were rated on a 7-point scale (1 = *should* to 7 = *should not*). Following each belief strength item, participants were asked to evaluate each outcome using another 7-point Likert-type rating scale (1 = *not at all* to 7 = *very much*). For example, participants were asked to evaluate these items: "*When it comes to becoming a mother, how much do you want to do what your family thinks you should do?"* and "*When it comes to having a career, how much to you want to do what your father thinks you should do?*". The structure of these items was replicated for each referent. Individual subjective norms were measured by the sum of each normative belief strength rating multiplied by each corresponding motivation to comply rating. For an overall measure of

subjective norms, items were averaged to create scales that had a possible range from 1-49 with higher scores reflecting greater perceived social pressure to pursue mothering or career roles. Cronbach's alphas for the belief-based mothering subjective norms scale and the belief-based career subjective norms scale were considered to be good and satisfactory, respectively, with all items retained. Please refer to Table 4.1.

4.3.2.3 Perceived behavioural control.

Direct perceived control items for mothering and careers were included. As above, these items were constructed in a manner consistent with Ajzen's (2006) guidelines. Questions focused on women's general perceptions of their ability and autonomy over mothering and career behaviours (e.g., "*whether or not I become a mother is completely up to me*" or "*I am confident that if I wanted to have a career I could*"). Women rated their agreement with each statement on a 7-point Likert-type scale (1 = *strongly disagree* to 7 = *strongly agree*). Items were averaged to create scale scores, creating scales that had a possible range from 1-7 with higher scores reflecting greater perceived control. Cronbach's alpha for the direct mothering perceived control scale was initially poor but improved to a satisfactory level with the removal of the 'difficult not to' item. Similarly, the direct career perceived control scale had poor reliability initially until the 'difficult not to' item was removed, increasing the scale's reliability to a satisfactory level.

Items measuring belief-based perceived control were created after the elicitation study. Specifically, participants were asked to rate their control belief strength in the following way for each control factor: "*I expect that I will find a suitable spouse/partner to have children with,*" "*I expect my career will be very demanding on my time,*" or "*I expect that I will not receive help with childcare from my future partner/spouse*." These items were rated on a 7-point Likert-type scale (1 = *strongly disagree* to 7 = *strongly agree*). For each item, participants were asked to evaluate their control belief power. For example, participants were asked to rate the difficulty to engage in specified behaviours on a 7-point Likert-type scale (1 = *much more difficult* to 7 = *much easier*). Items examples include, "*finding a suitable spouse/partner to have children with would make it … to become a mother*," "*My career being very demanding on my time will make it … to become a mother*," or "*Not receiving help with childcare from my future partner/spouse will make it … to have a career."* Perceived control was measured by the sum of each control belief strength item multiplied by each corresponding evaluation rating. Scales were then created by averaging these items, resulting in scales with a possible range of scores from 1-49. Higher

scores reflected greater perceived control. Cronbach's alpha for the belief-based mothering perceived control scale was considered acceptable with all eight items. Although the internal consistency could be improved by removing the item pertaining to the impact of mothering on careers, it was retained given the importance of this item to the construct validity of the scale and the centrality of this item to the research in question.

The Cronbach's alpha for the belief-based career perceived control with all items included was unacceptably low. Inter-item correlations were examined and two of the four items were removed. These items pertained to not having children and to having no financial concerns while pursuing education. Examination of the distribution for the item regarding not having children (i.e., *"I will not have children"* and "*not having children will make it easier to have a career*") revealed a multimodal pattern. Consequently, having children did not vary predictably with the other perceived control items (i.e., education, social support, and money). Although the retention of the child item was considered given the impact of the removal on construct validity, the scale's internal consistency was unacceptably low with the item retained ($\alpha < .50$). Similar examination of the distribution of the financial concerns item indicated women's responses also fell across the range of possible responses with clusters of responses on polar-opposite ends (i.e., few women expressed moderate levels of worry about money for school). Thus, although finances may be a potential barrier for a select group of women, it is not as salient for a number of other women. Women's financial concerns do not consistently vary with the beliefs that education and social support facilitate having a career: Women's social support is not likely to depend on funds for education, and financial worries related to education may be mitigated by accessing government loans and grants; consequently, having financial concerns does not necessarily limit women's perceived control over having a career. The removal of the children and money items left just two items (i.e., social support and education) in the scale, for which the Spearman-Brown's coefficient was satisfactory. Please refer to Table 4.1.

4.3.3 Mothering and career salience

Three questions were included to assess mothering salience and career salience. Using a 10-point Likert-type scale (*1 = not at all important* to *10 = very important*), participants were asked to indicate how much they valued their future career and motherhood roles. A third question asked them to rate their perceived value of both becoming a mother *and* having a career. These items were designed to allow for an overall estimate of the value of each role as

well as the value assigned to engaging in both roles. Participants were also asked to rate two additional 10-point Likert-type scale (*1 = strongly agree* to *10 = strongly disagree*) questions to assess salience. The first set of questions pertained to the perceived priority of mothering and career roles (e.g., "*becoming a mother is a top priority life goal*") and second set of questions pertained to the anticipated sense of personal successfulness if mothering or having a career was achieved (e.g., "*I would feel successful if I could have a career*"). These salience items were averaged for mothering and for careers separately in order to create two overall measures of role salience that had a possible range of 1-10. As reported in Table 4.1, Cronbach's alpha for the mothering salience scale was considered to be excellent and satisfactory for the career salience scale. Lastly, given that it was of interest to examine group differences for individuals with varying levels of emphasis on both roles, four categories based on median split on each role salience were created: high mothering and high career salience (n = 81), high mothering and low career salience (n = 62), low mothering and high career salience (n = 90), and low mothering and low career salience (n = 74). See Appendix H for salience questions.

4.3.4 Gender-role traits

Given that gender-role beliefs have been found to influence parenting and career intentions and behaviours, gender-role attitudes were examined to further assess the relationship between the behaviours of interest (i.e., mothering and having a career) and gender-role attitudes. As such, the Bem Sex Role Inventory (BSRI; Bem, 1974) was included to assess gender-role identification (see Appendix M). The BSRI is a 60-item measure composed of adjectives describing masculine/instrumental, feminine/expressive, and gender-neutral traits. Examples of masculine/instrumental items include: "*self-reliant,*" "*independent,*" and "*forceful."* Examples of feminine/instrumental items include: "*caring,*" "*jealous,*" and "*affectionate."* Examples of neutral items include: "*happy,*" "*loyal,*" and "*secretive."* Using a 5-point Likert-type scale (1 = *almost never true* to 5 = *almost always true*), all participants were asked to rate the extent to which they identified with each of the 60 masculine/instrumental, feminine/expressive, and neutral traits on the BSRI. Participants' ratings for each of the 20 masculine/instrumental and 20 feminine/expressive traits were separately averaged, resulting in a two continuous scores (i.e., masculine/instrumental and feminine/expressive) ranging from 1-5 with higher scores reflecting greater endorsement of traits. Given that masculine and feminine traits are not unidimensional, based on median split on each dimension, the participants' scores can also be used to determine

whether they belong to one of four potential groups: high instrumental and high expressive traits (n = 91), high instrumental and low expressive traits (n = 59), low instrumental and high expressive traits (n = 63), and low instrumental and low expressive traits (n = 94).

The BSRI is a commonly used measure of gender traits and many researchers (e.g., Bem, 1974; Holt & Ellis, 1998; Yaremko & Lawson, 2007) have reported that both the masculine/instrumental and feminine/expressive subscales have high reliability (α = .80-95). Further, despite the shifts in career and parenting trends described above and, although the BSRI was originally constructed nearly 40 years ago, the BSRI has been found to be a valid measure of gender-roles traits (Holt & Ellis, 1998). However, Holt and Ellis (1998) also argued that while the measure was still valid, there appeared to be evidence that the two dimensions of instrumental (masculine) and expressive (feminine) were converging in their sample of young adults. Nonetheless, as the main purpose for including the BSRI is to assess the extent to which young women identify with traditionally-gendered traits, the concerns about converging dimensions raised by Holt and Ellis (1998) are not of particular relevance. Cronbach's alpha for the instrumental scale was satisfactory. Although the internal consistency of the expressive scale was lower, it was still within the acceptable range (e.g., see Yaremko & Lawson, 2007). Refer to Table 4.1 for internal consistency values for the BSRI and each subscale.

4.3.5 Anticipated work-family conflict

The work-family conflict that young women potentially anticipate was measured using an adapted work-family conflict scale. The multidimensional Work-Family Conflict Scale (WFCS; Carlson, Kacmar, & Williams, 2000) is an 18-item scale that assesses the extent to which individuals are currently experiencing work-family conflict. The WFCS was developed to measure both directions of interference (i.e., work-to-family and family-to-work) across three forms of interference (i.e., time, strain, and behaviour). After a series of item development studies, Carlson et al. (2000) submitted the final set of WFCS items to both principal components and confirmatory factor analyses. The authors' results suggested the WFCS measures the intended six distinct types of interference, which are captured by three items per factor. Examples of items include: "*my work keeps me from my family activities more than I would like*" (time-based work-to-family interference), "*due to stress at home, I am often preoccupied with family matters at work*" (strained-based family-to-work interference), and "*the behaviours that I perform that make me effective at work do not help me to be a better parent*

and spouse" (behaviour-based work-to-family interference). For the purposes of the current study, each item was adapted to assess the level of work-family conflict that is anticipated by young women. Examples of modified items include: "*my work* will *keep me from my family activities more than I would like,*" "*due to stress at home, I* will *often* be *preoccupied with family matters at work,*" and "*the behaviours that I* will *perform that* will *make me effective at work* will *not help me to be a better parent and spouse."* A copy of the modified WFCS is provided in Appendix N.

For the original WFCS measuring experienced work-family interference, Carlson et al. (2000) demonstrated that the WFCS has good discriminant validity: The correlations between the six factors ranged from .24 to .83, with only two correlations exceeding an $r > .60$. Reliability coefficients ranged from acceptable to good (i.e., $\alpha = .79$ to $\alpha = .87$). Godek (2012) also reported an overall reliability of $\alpha = .87$ for the WFCS and found good coefficient alphas for all of the subscales ($\alpha > .79$). For the purposes of this study, only the total score and the total scores for family-to-work interference and work-to-family interference were used. Items were averaged to generate scale scores, creating scales that had a possible range from 1-5. Cronbach's alphas for the total, work-to-family, and family-to-work interference scales ranged from satisfactory to good. See Table 4.1 for a summary of all reliability coefficients.

4.3.6 Fertility knowledge & reproductive intentions

Reproductive knowledge (e.g., average number of months expected to conceive) and intentions to use assisted reproductive technologies and beliefs about the efficacy of such interventions may be belief-based indicators of perceived behavioural control. As such, a total of 10 items created for the purpose of this study were used to assess both participants' fertility knowledge and specific aspects of their reproductive intentions (refer to Appendix O).

4.3.7 Demographic information

To ensure that the participants who responded in the main study match on basic characteristics with the sample recruited for the elicitation phase, some demographic information was collected (e.g., parental status, age, gender, relationship status). Additionally, participants were asked to identify their intended career path and the career experiences of their mothers, given that this was found to predict young women's decisions over and above young women's own attitudes towards careers (Marks & Houston, 2002). See Appendix P for demographic information questions.

Chapter 5: Main Study Data Cleaning

5.1 Data Analysis Method

Quantitative statistical analyses, with few exceptions, were conducted using the Statistical Package for the Social Sciences (SPSS) version 25. Comparisons of the differences in magnitude between correlations were calculated using Preacher's (2017) program.

5.2 Data Preparation.

5.2.1 Data cleaning procedures.

The sample was reviewed to ensure that all retained participants met inclusionary criteria (i.e., female, nulliparous, university student between 18-29 years of age). Non-completers of the questionnaire (i.e., missing all demographic information) were excluded. The data was then reviewed and cleaned according to Tabachnick and Fidell's (2007) guidelines. After participants, whose data was not consistent with the inclusion criteria for the study, were removed, patterns of missing data were reviewed. Missing data patterns were examined across all scales (i.e., mothering intentions, career intentions, mothering salience, career salience, mothering direct and belief-based attitudes, subjective norms, and perceived control, career direct and belief-based attitudes, subjective norms, and perceived control, instrumental traits, expressive traits, family conflict, and work conflict).

Results from examining missing data for these variables indicated that there were missing values scattered across all of the 20 main scale variables, 25.79% (n = 90) of all participants (N = 349), and 1.93% (n = 135) of all data points (N = 6,980). Visual examination of a graphical depiction of missing value patterns suggested that monotonicity was not present. Little's (1988) Missing Completely at Random (MCAR) test for assessing patterns of missing data across the core variables was used and the chi-square value was nonsignificant, $\chi^2(814, N = 6{,}980) = 853.71$, $p = .16$, indicating that there was no statistically significant predictable pattern for missing data with the unobserved variables.

Little's MCAR test was conducted for each of the scales to ensure the patterns of missing data within scales also met this criterion (see Appendix R). Most of the analyses indicated that the data was missing completely at random. For the belief-based mothering attitudes, $\chi^2(139, N = 4{,}537) = 171.55$, $p = .03$, and family-to-work interference, $\chi^2(63, N = 3{,}141) = 89.26$, $p = .02$, scales the test statistic was significant, possibly indicating the pattern of missing data on these scales were not missing completely at random. However, it is possible that these p values reflect

Type 1 error: A family-wise Bonferroni adjustment for alpha across 20 analyses would require statistical significance of $p = .0025$, suggesting that the belief-based mothering attitudes and work-to-family interference p values do not reflect significant MCAR violations.

Given that missing data can be problematic in terms of potential significant loss of data (and statistical power) and potential biasing of sample (Horton & Kleinman, 2007), it was determined that missing data would be estimated as opposed to deleted. The potential for greatly diminishing the sample size was addressed with the Maximum Likelihood estimation procedure for each of the scales, based on the justification put forth by Allison (2012). Maximum likelihood approach provides an unbiased estimate when data are missing completely at random or missing at random (Tabachnick & Fidell, 2007); therefore, having satisfied MCAR standards, missing data were estimated.

Second, the data were assessed for univariate outliers. Initially, I considered determining univariate outliers by examining z-score values for each item of each scale. However, given the number of items and scales to be evaluated for assumptions, in order to preserve sample size, only scale-level outliers were examined; neither scale- nor item-level outliers were removed. All cases with extreme values ($z > \pm 3.29$) on scales were identified as univariate outliers. A number of univariate outliers ($n = 35$) were identified based on total scale scores.

Third, the normality of each of the overall scales was assessed using graphical techniques. As significance testing (e.g., Shapiro-Wilk's) for nonnormality can be problematic with larger sample sizes (Field, 2009), visual inspection of Normal Q-Q Plots and histograms were completed for each of the measured scale items (and overall scales) along with careful inspection of means, medians, modes, and standard deviations for the distributions in addition to skew and kurtosis (i.e., mean of skewness over standard error of skewness and mean of kurtosis over standard error of kurtosis). There were many variables that were significantly skewed and/or kurtotic in each of the samples according to the graphical and statistical information.

No data transformations were performed for nonnormal variables for a number of reasons. One reason for choosing not to transform variables is that some of these distributions were not likely to be normal within the population (e.g., career and mothering salience and intentions are not likely to be normally distributed, reflecting that the majority of women in this undergraduate population value and pursue both mothering and career roles while there are also some who are much less likely to value one or both of those roles who would skew the

distribution). Similarly, mothering attitudes were negatively skewed (i.e., direct and belief-based), which means that women hold slightly positively biased views of mothering and this is not entirely unexpected based on previous research demonstrating that women hold more positive views of mothering (Lawson, 2004). An additional reason to not transform the distributions—particularly for the distributions where there was no a priori population-based reason to expect nonnormality—is that data are often still skewed and kurtotic following transformation; as such, transformations can be costly in terms of meaningful interpretation without fully correcting the issue of nonnormality. For example, a logarithmic transformation of the career intentions variable could not correct normality given that the vast majority of women (56.40%) rated their career intentions at the highest end of the continuum (i.e., score of 49/49) and an additional 20.1% rated their career intentions from moderately to extremely high. Such a transformation would simply create a distribution that was extremely negatively skewed. Lastly, various statistical methods are robust despite non-normal data (and are discussed as applicable below). Therefore, in further attempt to moderate the impact of nonnormal data, data analysis methods that are known to be less sensitive to violations of normality were selected where possible (e.g., within regression analyses).

Fourth, Mahalanobis Distance was calculated for combinations of scales to test for multivariate outliers. The Mahalanobis Distance was tested against the cumulative chi-square, providing a probability value for each case (i.e., testing the hypothesis that the value is from the chi-square distribution). A probability value of $p < .001$ was employed and any case below this value was considered a multivariate outlier. A total of seven cases were identified as multivariate outliers. Given the number of univariate and multivariate outliers identified, independent samples *t*-test and chi-square analyses were conducted to compare differences between participants' basic demographics for cases retained and cases identified as outliers. The results of these comparisons indicated that there were no differences on demographic variables (i.e., age, ethnicity, relationship status, sexual orientation, program of study) between cases retained and cases identified as outliers. I decided that no outliers would be removed given that these outliers may represent meaningful variation in the sample.[2]

[2] Although the inclusion of outliers can increase Type I and Type II error in an unpredictable manner, all analyses were conducted with the outliers removed and retained. Minimal differences were observed when included and excluded; therefore, I decided that it was best to retain these potentially meaningful data points rather than to exclude them.

Fifth, bivariate scatterplots of all combinations of scales to be entered into the models were reviewed to assess for linearity and homoscedasticity. Given that there were scales with significant nonnormal distributions, it was expected that not all bivariate plots would demonstrate linearity or homoscedasticity. There were no concerns with respect to curvilinear relationships between the scales. There were concerns with respect to homoscedasticity for many pairs of variables. As such, as recommended, a more stringent significance level (i.e., $\alpha = .01$) was employed given that the data violate the assumption of homoscedasticity (Tabachnick & Fidell, 2007).

Sixth, and finally, data were assessed for multicollinearity given that multicollinearity can inflate standard error estimates and contribute to unstable results (Tabachnick & Fidell, 2007). Multicollinearity was assessed using regression methods to estimate the shared variance between all items within each scale for independent variables. Sets of items were regressed onto each other item to assess for exceedingly high levels of shared variance, which would suggest that the measures are too highly correlated or redundant. Although there are inconsistent cutoff scores in the literature, in the current study variance inflation scores (VIF) greater than 5 were considered to be indicative of multicollinearity concerns (Rogerson, 2001). Although most scales did not have any items with VIF values above three, the mothering perceived control items had some VIF values above four. As such, none of the items on any of the scales were considered multicollinear, resulting in the retention of all items for each of the scales.

Chapter 6: Main Study Results

6.1 Scale Properties

The scale properties of each of the 21 scales in this study were also assessed. Table 6.1 presents descriptive statistics for each scale (i.e., mean, median, standard deviation, skew, and kurtosis values) as well as the theoretical and observed range for each of the scales.

6.2 Preliminary Analyses of TPB Variables

Preliminary analyses were conducted to examine relationships between TPB variables. Given violations of normality and homogeneity of variance, nonparametric tests (i.e., Kendal's Tau-C and Spearman's *r*) for continuous variables were conducted and considered in comparison to results of parametric approaches. As an initial check to assess the expected relationships between direct and belief-based measures of the TPB as well as their relationships with intentions, Pearson's *r* correlations were calculated and are provided in Table 6.2. Nonparametric tests of relationships between these continuous variables were also conducted. These analyses were consistent with Pearson *r* findings and are, therefore, not summarized here. Given the number of relationships presented in Table 6.2 (resulting in a high family-wise error rate), the significance levels for these correlations may suggest some relationships are present when they may be specious. Thus, greater emphasis is placed on degree of relationship as opposed to significance of *r* values, based on Cohen's (1988) recommendations that in social and psychological research $r > .10$, $r > .30$, and $r > .50$, represent small, medium, and large effect sizes, respectively. The direct and indirect attitudes, subjective norms, and perceived control scales for their corresponding roles were all positively correlated. The effect size for mothering direct and belief-based attitudes was large while the effect sizes for mothering direct and belief-based subjective norms and mothering direct and belief-based perceived control were both medium. Each of the mothering TPB scales was positively related to mothering intentions, although there was substantial variability in effect sizes. The effect sizes for career direct and belief-based attitudes, subjective norms, and perceived control were all medium in size. Each of the career TPB scales were positively related to career intentions, although there was also substantial variability in the observed effect sizes.

6.3 Mothering and Career Intentions (Hypotheses 1A-1G)

It was anticipated that the majority of young women in the current study would express career intentions (Hypothesis 1A). Indeed, 98.6% of women, representing all but five women in

Table 6.1. ***Descriptive statistics for main scales.***

Scales	Descriptive Statistics						
N = 349	*M*	*Mdn*	*SD*	Skew	Kurtosis	Theoretical Range	Observed Range
Mother Direct							
Attitudes	5.15	5.40	1.11	-12.80	12.12	1-7	1.00-6.90
Subjective norms	5.50	5.80	1.10	-9.43	7.85	1-7	1.20-7.00
Perceived control	5.66	5.67	1.20	-7.79	3.03	1-7	1.33-7.00
Career Direct							
Attitudes[a]	5.64	5.70	0.55	-3.45	2.07	1-7	3.60-7.00
Subjective norms	6.08	6.20	0.81	-9.50	6.13	1-7	2.60-7.00
Perceived control	6.31	6.67	0.83	-13.53	13.20	1-7	2.33-7.00
Mother Belief-Based							
Attitudes	21.68	22.92	6.06	-9.45	5.32	1-49	1.00-32.69
Subjective norms[a]	24.28	25.33	11.44	-0.39	-4.68	1-49	2.17-49.00
Perceived control	29.42	30.75	7.55	-3.12	-2.69	1-49	8.25-44.88
Career Belief-Based							
Attitudes	26.49	27.00	5.58	-3.24	-1.17	1-49	8.88-40.13
Subjective norms[a]	22.71	23.00	7.73	0.36	0.96	1-49	2.83-49.00
Perceived control	41.74	42.00	7.76	13.58	19.64	1-49	2.00-49.00
Mothering intentions	33.52	36.00	16.61	5.16	-3.62	1-49	1.00-49.00
Career intentions	42.15	49.00	10.19	13.00	9.22	1-49	1.00-49.00
Mothering salience	20.05	22.00	8.67	5.24	-2.87	1-30	3.00-30.00
Career salience	26.29	27.00	3.77	8.69	4.03	1-30	13.00-30.00
Instrumental traits[a]	3.52	3.50	0.39	1.41	1.96	1-5	2.07-4.55
Expressive traits[a]	3.48	3.45	0.34	-0.08	4.92	1-5	2.10-4.65
Work-family conflict[a]	2.63	2.61	0.46	-2.11	2.65	1-5	1.22-4.33
Work to family conflict[a]	2.85	2.78	0.68	-1.80	0.70	1-5	1.00-5.00
Family to work conflict[a]	2.42	2.44	0.67	-2.13	1.12	1-5	1.00-5.00

Note. For all scales higher scores represent greater endorsement. Range presented is theoretical not observed.
[a] Normal distribution: no significant kurtosis or skew concerns.

Table 6.2. ***Zero-order correlations between TPB constructs.***

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	MAD													
2	MSND	.30***												
3	MPBCD	.39***	.21***											
4	MA	.88***	.31***	.38***										
5	MSN	.34***	.31***	-.04	.33***									
6	MPBC	.26***	.21***	.42***	.26***	-.41***								
7	CAD	-.06	.01	.03	-.07	.05	-.09							
8	CSND	.09	.17**	.06	.10	.19***	.02	.14*						
9	CPBCD	.00	.08	.13*	.01	.11*	.08	.27***	.28***					
10	CA	-.13*	.08	.15**	-.10	-.44***	.50***	.33***	.19***	.20**				
11	CSN	.26***	.28***	.11*	.27***	.46***	.03	.04	.37***	.03	.02			
12	CPBC	.10	.04	.20***	.17***	.10	.18**	.16**	.21***	.39***	.16**	.12*		
13	Mothering intentions	.71***	.38***	.46***	.71***	.29***	.26***	-.11*	.07	.02	-.13*	.20***	.08	
14	Career intentions	-.06	.06	.10	-.07	.11*	-.10	.39***	.25***	.56***	.20***	.12*	.22***	.03

Note. *$p < .05$, ** $p < .01$, ***$p < .001$. Based on overall sample $N = 349$. MAD = direct mothering attitudes; MSND = direct mothering subjective norms; MPBCD = direct mothering perceived control; MA = belief-based mothering attitudes; MSN = belief-based mothering subjective norms; MPBC = belief-based mothering perceived control; CAD = direct career attitudes; CSND = direct career subjective norms; CPBCD = direct career perceived control; CA = belief-based career attitudes; CSN = belief-based career subjective norms; CPBC = belief-based career perceived control

the sample, responded affirmatively to the dichotomous career intentions question. It was also anticipated that the majority of women would express intentions to become mothers (Hypothesis 1B): In fact, just 13.9% (n = 48) of the young women indicated that they had no intentions of becoming mothers. Although there are some women who are interested in pursuing only the career role and some women interested in pursuing only the mothering role, clearly the majority of women (84.8%) intend to pursue both roles, consistent with my hypothesis (Hypothesis 1C). Moreover, no woman expressed intentions to pursue neither role: All women who did not intend to pursue careers (n = 5) intended to become mothers and all women who did not intend to become mothers (n = 48) intended to pursue careers. To further explore the patterns of young women's role intentions, I examined the continuous ratings of career intentions. The sample predominantly included those who had high career intentions (i.e., 295 of 349 participants rated intentions as 35-49 on a scale ranging from 1-49). For mothering intentions, 209 women expressed high mothering intentions (i.e., 35-49 on a scale ranging from 1-49). A paired samples t test was conducted to compare young women's role intentions ratings. Mothering intentions were significantly lower than career intentions, $t(348) = 8.39$, $p < .001$, Cohen's $d = 0.63$.

6.3.1. Specific fertility intentions.

Of those who responded and indicated they wanted to have children, the mean number of children women wanted was 2.68 (Mdn = 2.00, SD = 0.95). Women anticipated having their first child in about 6.62 years (SD = 3.05) at the latest. Women who expressed greater mothering intentions were expected to express intentions to have children earlier; however, women who expressed higher levels of career intentions were expected to express greater intentions to delay having children, as indicated by women's reported intended age at first birth (Hypothesis 1D). However, this hypothesis was only partially supported. Mothering intentions, but not career intentions, shared a significant relationship with intended age of first birth (r = -.44, $p < .001$), such that as mothering intentions increased, the age at which women anticipated having a first child decreased. Mothering intentions were strongly, positive correlated with larger intended family size while career intentions were only weakly and negatively correlated with intended family size, suggesting that the latter may be a less important consideration in young women's family-size planning. Table 6.3 summarizes the relationships between role intentions, role salience, and aspects of young women's specific fertility intentions.

Role intentions were hypothesized to be positively correlated with their corresponding role salience (Hypothesis 1E). As can be seen in Table 6.3, career intentions and career salience were significantly, positively, and moderately correlated and mothering intentions and mothering salience were significantly, positively, and strongly correlated. Career salience was significantly and negatively (albeit weakly) associated with mothering intentions, but mothering salience was not correlated with career intentions, suggesting career intentions are likely not influenced by the perceived importance of the family role but mothering intentions may be influenced by the perceived importance of the career role.

It was also anticipated that greater levels of expressive traits would be positively associated with mothering intentions and greater instrumental traits would be positively associated with career intentions (Hypothesis 1F). Pearson *r* correlations in Table 6.3 show the expected relationships were confirmed, although for career intentions and instrumental traits the correlation was weak. Finally, it was anticipated that women who expressed intentions to be childfree would report more instrumental and fewer expressive traits (Hypothesis 1G). Independent samples *t* tests partially confirmed these relationships. Women who intended to be mothers ($n = 297$) endorsed more expressive traits ($M = 3.52$, $SD = 0.33$) compared to those who did not intend to become mothers ($n = 48$, $M = 3.26$, $SD = 0.31$), $t(343) = 5.14$, $p < .001$, Cohen's $d = 0.81$. In contrast, there was no difference between women who did not intend to be mothers ($M = 3.52$, $SD = 0.38$) and those who expressed intentions to become mothers ($M = 3.54$, $SD = 0.44$) in terms of instrumental traits, $t(343) = -0.37$, $p = .71$, Cohen's $d = 0.05$.

6.4 Mothering and Career Role Salience (Hypotheses 2A-2E)

Relationships with mothering and career role salience were examined across a number of variables. Although it was expected that the majority of women would express high role salience for careers and mothering overall, it was also hypothesized that as career salience increased, mothering salience would decrease (Hypothesis 2A). Indeed, the Pearson *r* correlations in Table 6.3 between role salience measures provide support for this hypothesis, as role salience shared a small negative correlation. The strength of this relationship is in line with expectations as well, as it is likely attenuated by the fact that the majority of young women in this study expressed high intentions and salience with regards to both roles. As was the case with role intentions, the mothering role was considered less salient to young women than the career role, $t(348) = -11.45$, $p < .001$, Cohen's $d = 0.93$. Refer to Table 6.1 for means and standard deviations.

Table 6.3. ***Zero-order correlations between intentions, salience, intended fertility decisions, gender role traits, and attitudes.***

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Mothering intentions													
2	Career intentions	.03 *n* = 349												
3	Mothering salience	.85*** *n* = 349	-.10 *n* = 349											
4	Career salience	-.24*** *n* = 349	.48*** *n* = 349	-.22*** *n* = 349										
5	Intended age of first birth	-.44*** *n* = 256	.06 *n* = 256	-.41*** *n* = 256	.18** *n* = 256									
6	Number of desired children	.35*** *n* = 243	-.13* *n* = 243	.41*** *n* = 243	-.21** *n* = 243	-.27*** *n* = 208								
7	Years to first births	-.24*** *n* = 250	.18** *n* = 250	-.29*** *n* = 250	.25*** *n* = 250	.45*** *n* = 250	-.23** *n* = 204							
8	Distress if unable to have children	.68*** *n* = 349	-.07 *n* = 349	.75*** *n* = 349	-.18** *n* = 349	-.31*** *n* = 256	.30*** *n* = 243	.19** *n* = 250						
9	Intended use of fertility treatment	.41*** *n* = 349	-.03 *n* = 349	.45*** *n* = 349	-.17** *n* = 349	-.02 *n* = 256	.08 *n* = 243	.04 *n* = 250	.45*** *n* = 349					
10	Intended reliance on fertility treatment	.13* *n* = 348	.08 *n* = 348	.21*** *n* = 348	.03 *n* = 348	.09 *n* = 255	-.11 *n* = 242	.05 *n* = 249	.20*** *n* = 348	.42*** *n* = 348				
11	Expressive traits	.34*** *n* = 349	-.02 *n* = 349	.35*** *n* = 349	-.11* *n* = 349	-.03 *n* = 256	.17** *n* = 243	.13* *n* = 250	.31*** *n* = 349	.16** *n* = 349	.16** *n* = 348			
12	Instrumental traits	.06 *n* = 349	.16** *n* = 349	.05 *n* = 349	.09 *n* = 349	.08 *n* = 256	-.06 *n* = 243	.01 *n* = 250	.04 *n* = 349	.12* *n* = 349	.06 *n* = 348	.29*** *n* = 349		
13	Mothering attitudes (belief-based)	.71*** *n* = 349	-.07 *n* = 349	.76*** *n* = 349	-.25*** *n* = 349	-.28*** *n* = 256	.31*** *n* = 243	.20** *n* = 250	.69*** *n* = 349	.40*** *n* = 349	.17** *n* = 348	.35*** *n* = 349	.01 *n* = 349	
14	Career attitudes (belief-based)	-.13* *n* = 349	.20*** *n* = 349	-.10 *n* = 349	.22*** *n* = 349	.21** *n* = 256	.01 *n* = 243	.17** *n* = 250	-.15** *n* = 349	.16** *n* = 349	-.11* *n* = 348	.15** *n* = 349	.13* *n* = 349	-.10 *n* = 349

*Note. S*amples sizes varied based on number of women reporting intentions to have children and the omission of some item responses within that subsample. *p < .05, ** p < .01, ***p < .001.

I anticipated women's role salience would be positively associated with young women's attitudes towards those roles (Hypothesis 2B). Pearson's *r* correlations in Table 6.3 support this conclusion; however, the relationship between mothering intentions and mothering attitudes was strong and the relationship between career intentions and career attitudes was weak. As stated in Hypothesis 2C, I anticipated role salience in one domain would be negatively associated with attitudes in another domain. Although mothering salience was not associated with less positive attitudes towards careers, the expected relationship was observed for career salience and mothering attitudes: A small negative relationship indicated that as the importance of the career role increased, the positive attitudes women hold towards mothering decreased. Put another way, as women's mothering attitudes became more positive, career salience declined.

I anticipated role salience would be associated with specific aspects of reproductive intentions (Hypothesis 2D); namely, it was hypothesized that greater career-role salience would be associated with greater intentions to postpone reproduction (i.e., greater age at first intended birth), to have fewer children, to be childfree, and to express less anticipated infertility-related distress (with high scores representing more distress). Opposite relationships were expected for those with greater mothering-role salience (i.e., earlier age at first birth, more children, less likely to be childfree, and greater anticipated infertility-related distress). Pearson *r* correlations, presented in Table 6.3, indicated that career salience was significantly and positively associated with anticipated age at first birth and significantly negatively associated with desired number of children, anticipated distress if they were unable to have children, and likelihood of seeking assisted reproductive technologies to conceive. In contrast, mothering salience was significantly and negatively associated with anticipated years until first birth and significantly and positively associated with the number of children young women wanted to have, the anticipated degree of distress if they were unable to have children, the likelihood of seeking assisted reproductive technologies to conceive, and the likelihood of relying upon assisted reproductive technologies to conceive. Finally, anticiapted infertility-related distress was also significantly and positively associated with the number of children young women reported wanting and significantly and negatively associated with the age of anticipated first childbirth (i.e., more infertility-related distress was anticipated by women who expressed desires to have more children and by those who expressed desires to have children earlier in life).

Similar to above with respect to intentions and gender-role traits, I anticipated role salience and gender-role traits would share predictable relationships. Specifically, I hypothesized that women with greater mothering role salience would be higher in expressive traits, those with greater career role salience would be higher in instrumental traits, and those with greater dual-role salience would endorse more expressive and instrumental traits (Hypothesis 2E). As presented in Table 6.3, mothering salience was moderately and positively associated with expressive traits while career salience was weakly and negatively associated with expressive traits; unexpectedly, neither mothering nor career salience were associated with instrumental traits. To further examine dual-role salience and traits, four role salience categories were created using median splits: These categories were high dual salience (n = 103), high mothering salience and low career salience (n = 75), high career and low mothering salience (n = 115), and low dual salience (n = 56). A one-way analysis of variance (ANOVA) was conducted to examine group differences in instrumental traits and a second one-way ANOVA was conducted to examine group difference in expressive traits. The ANOVA examining instrumental traits was not significant, $F(3, 345) = 0.75$, $p = .52$, with MSE 0.15, partial $\eta^2 = .01$. See Table 6.5 for means and standard deviations for gender traits across each salience group.

Table 6.4. ***Means and standard deviations of gender traits and anticipated work-family conflict by role salience groups.***

	Salience							
	High Career, High Mothering		Low Mothering, High Career		High Mothering, Low Career		Low Career, Low Mothering	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Instrumental	3.56	0.36	3.52	0.41	3.49	0.40	3.47	0.38
Expressive	3.54[a]	0.34	3.38[a,b]	0.37	3.57[b]	0.32	3.46	0.32
WFC	2.58[a]	0.39	2.57[b]	0.48	2.68	0.50	2.78[a,b]	0.48
Work to family conflict	2.80	0.56	2.76	0.70	2.95	0.73	2.98	0.76
Family to work conflict	2.37	0.67	2.39	0.72	2.41	0.66	2.58	0.59

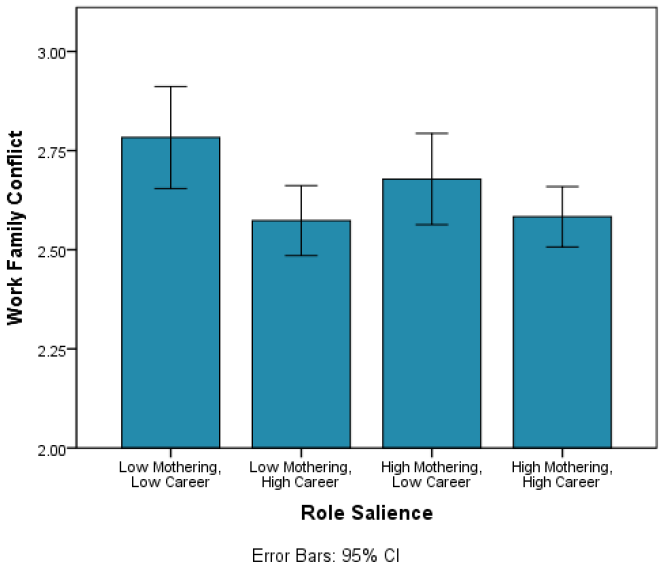
Note. [a] = significantly differed. [b] = significantly differed.

The results of the ANOVA examining expressive traits across role salience groups was significant, $F(3, 345) = 6.50$, $p < .001$, with MSE 0.11, partial $\eta^2 = .05$. Given that Levene's test for equality of variances was not significant, Tukey's HSD post-hoc tests for differences between groups was used to compare mean differences for each of the groups. Women with high career and low mothering role salience overall endorsed significantly lower levels of expressive traits

than women with higher mothering and lower career role salience (p = .001) and lower levels of expressive traits than women with high dual role salience (p = .003). The means and standard deviations for expressive traits across each salience group are presented in Table 6.4.

Lastly, it was anticipated that young women with high dual-role salience would report higher anticipated work-family conflict (WFC) while women who highly value only one role (i.e., either the mothering or the career role) would express less anticipated WFC (Hypothesis 2F). It was further anticipated that there would be differences in anticipated family-to-work and work-to-family conflict based on role salience. Three ANOVAs were conducted to test for differences between role salience groups on anticipated WFC, work-to-family conflict, and family-to-work conflict. There were differences across groups for overall anticipated WFC, $F(3, 345) = 3.28$, p = .02, with MSE 0.21, partial η^2 = .03. Follow up Tukey's HSD post-hoc tests revealed significant differences between the low dual-role salience and the high career and low mothering group (p = .03) and the high dual-role group (p = .04). Contrary to my hypothesis, women who expressed *lower* dual-role salience anticipated *higher* WFC than women who expressed high career and low mothering role salience and women who expressed high dual-role salience. The pattern of results for WFC across salience groups suggests women with high career salience—regardless of the level of mothering salience—do not anticipate greater WFC. See Figure 6.1 for a visual depiction of anticipated WFC across salience categories.

Figure 6.1. Mean work family conflict across role salience groups.



Differences between salience groups were not observed for individuals across conflict subscales. Specifically, all role salience groups expressed low anticipated levels of work-to-family interference: There were no differences in anticipated work-to-family interference across these groups, $F(3, 345) = 2.19$, $p = .09$, with MSE 0.46, partial $\eta^2 = .02$. There were also no differences across salience groups for family-to-work interference, $F(3, 345) = 1.36$, $p = .25$, with MSE 0.45, partial $\eta^2 = .01$. See Table 6.4 for a summary of the conflict scale means and standard deviations for each of salience groups.

6.5 TPB Models: Data Analysis Plan

The main purpose of the current research was to assess the utility of the basic and expanded TPB models for role intentions. Although Structural Equation Modeling (SEM) analysis is ideal for testing theoretical models and although others (e.g., Bentler & Yuan, 1999) have demonstrated that SEM can be used with samples as small as 60 participants, increasingly complex models—such as the full latent measurement models proposed in the current research—and severe violations of statistical assumptions necessitate much greater sample sizes. SEM analyses work best with large samples and a minimum sample size of 200 and a parameter to participant ratio of 1:10 is recommended (Hoe, 2008; Lei & Wu, 2007). Given that the inclusion of a measurement model requires greater sample sizes to adequately test complex models and given that all of the measurement models in the current study involved more than 40 parameters to be estimated, I decided the measurement model would not be tested through SEM.

Consequently, I chose to use regression analyses to assess the paths in the TPB models (i.e., to assess the strength of relationships between the TPB constructs and role intentions). Simultaneous and multiple regression approaches are considered more robust to violations of assumptions (Keith, 2015). Simultaneous multiple regression enables testing of the hypothesized relationships between TPB constructs to determine whether or not these constructs account for a significant amount of variability in intentions. Therefore, simultaneous multiple regression analyses were conducted to further assess the relationships between belief-based TPB constructs and role intentions for each of the basic TPB career and mothering intentions models. Please refer to Figures 6.2 and 6.3 depicting the individual pathways in the basic TPB mothering and career intentions models that were tested (i.e., alphabetically labeled).

Hierarchical regression analyses were conducted to assess the additional hypothesized paths in the expanded TPB mothering and career intentions models. Figures 6.4 and 6.5 depict

Figure 6.2. ***Theory of planned behaviour model for mothering intentions.***

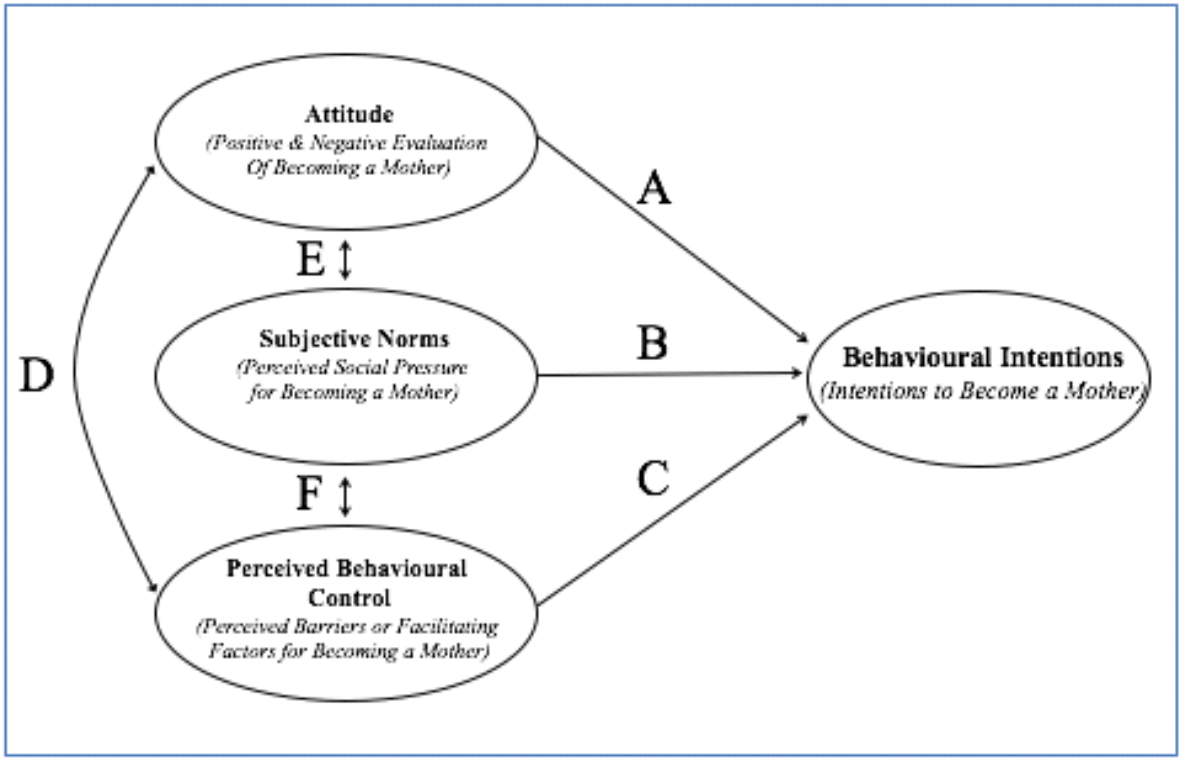


Figure 6.3. ***Theory of planned behaviour model for career intentions.***

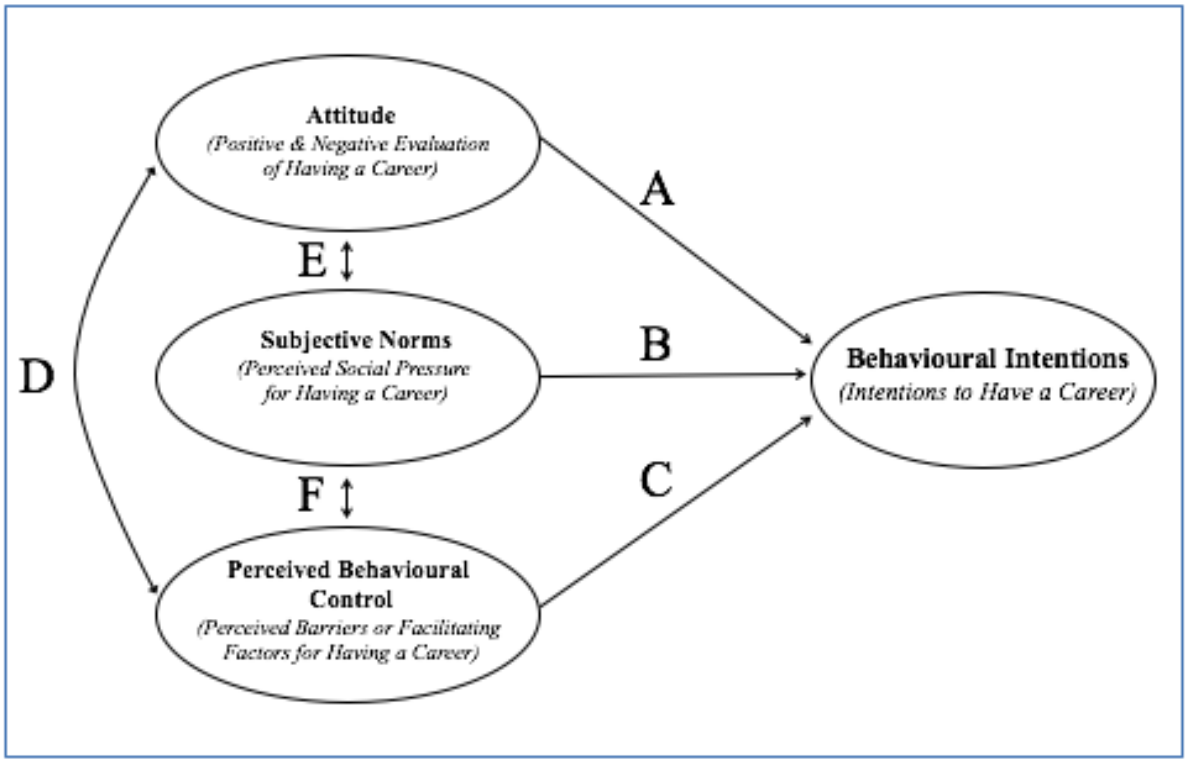


Figure 6.4. ***Expanded theory of planned behaviour model for mothering intentions.***

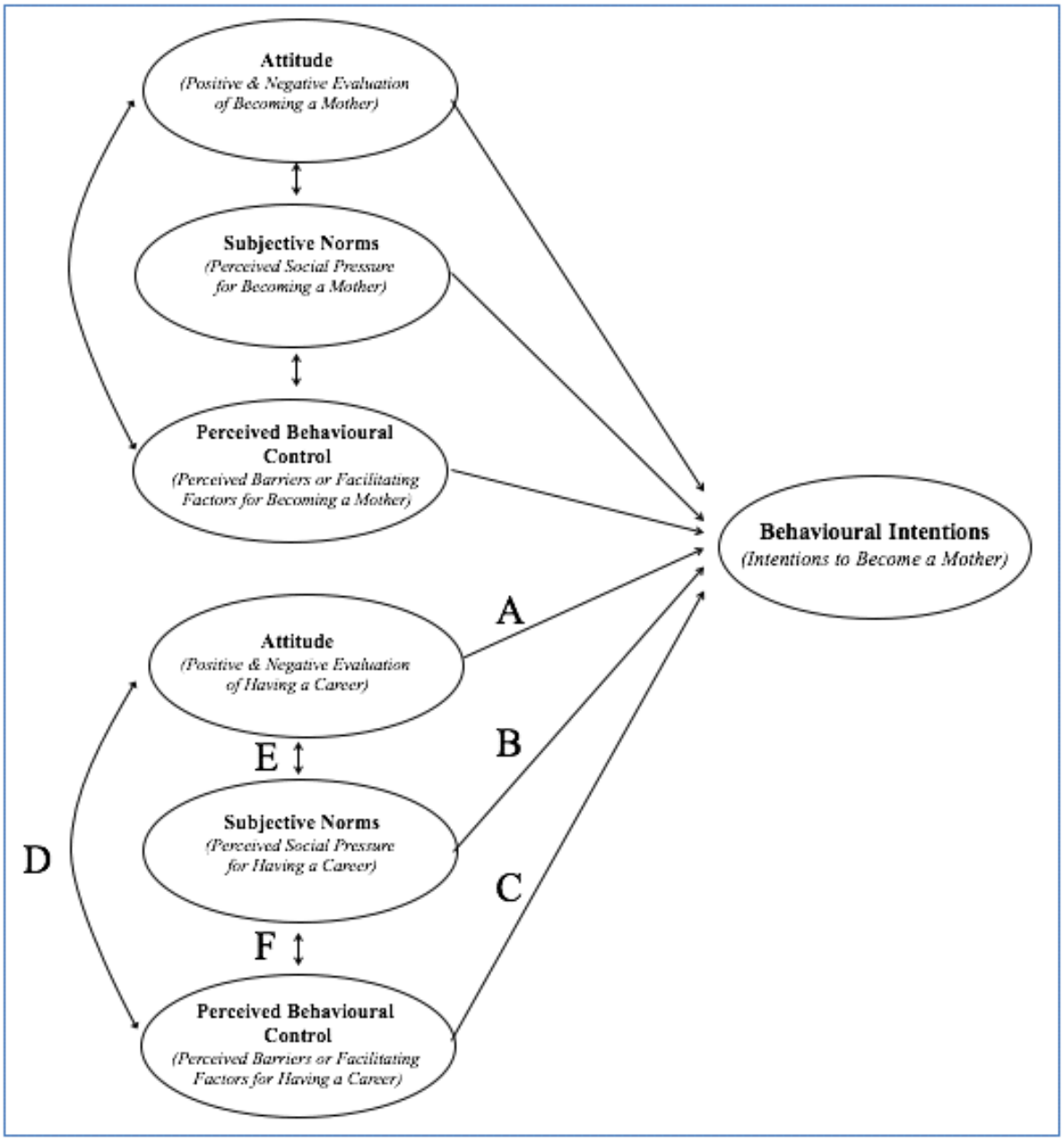


Figure 6.5. ***Expanded theory of planned behaviour model for career intentions.***

the additional pathways that were tested in the expanded model. Specifically, hierarchical multiple regression analyses allow for the examination of the hypothesized additional relationships between role intentions and intentions-incongruent TPB constructs (i.e., the relationships between career TPB constructs and mothering intentions and the relationships between mothering TPB constructs and career intentions). The first step of hierarchical multiple regression was identical to the simultaneous multiple regression analyses conducted to test the basic TPB models. However, the second step of the hierarchical multiple regression tested the relationships between role intentions and belief-based constructs related to other-role domains, allowing for the quantification of the unique variance in role intentions accounted for by the addition of role-incongruent TPB constructs over and above the contributions of the role-congruent constructs.

6.6 Preliminary Examination of Predicted Basic TPB Model Relationships

Preliminary examinations of the relationships between direct and belief-based TPB variables as well as these TPB variables and role intentions were conducted (as reported in Table 6.2). Each direct mothering measure shared a moderate to large positive relationship with its belief-based counterpart, as anticipated. Each direct career measure shared a small to moderate positive relationship with its belief-based counterpart. In terms of the prediction of intentions, all mothering measures were positively correlated with mothering intentions, although the size of these relationships varied from small to large. Similarly, all of the career measures shared positive relationships with career intentions; however, the strength of these relationships also varied from small to large.

Each TPB construct was expected be related to the other TPB constructs pertaining to the same role (i.e., mothering attitudes, subjective norms, and perceived control were expected to be correlated and career attitudes, subjective norms, and perceived control were expected to be correlated). As can be seen in Table 6.2, the strength of these relationships greatly varied. For mothering, attitudes and subjective norms shared a moderate significant relationship (r = .33), attitudes and perceived control shared a small significant relationship (r = .26), and subjective norms and perceived control shared a moderate, negative, and significant relationship (r = -.41). In contrast, no relationships were observed between career attitudes and subjective norms (r = .04) nor career subjective norms and perceived control (r =.12) and a weak, positive, and significant relationship was observed between career attitudes and perceived control (r = .16).

6.7 Basic TPB Models of Mothering and Career Intentions (Hypotheses 3A-3C)

In addition to exploring the relationships between role intentions and TPB constructs with correlations, the goal of the research was to test the TPB model with respect to predicting role intentions. Given previous literature, demonstrating the utility of the TPB for fertility and career intentions, I hypothesized that the basic TPB model would be supported for both mothering intentions and career intentions (Hypotheses 3A and 3B). The basic TPB model specifies that specific role-related attitudes, subjective norms, and perceived control directly contribute to role intentions; it further stipulates that attitudes, subjective norms, and perceived control share bidirectional relationships. As described above, it was anticipated that attitudes and subjective norms would strongly predict mothering intentions. Moreover, it was anticipated that perceived control would significantly add to the prediction of mothering intentions, thereby providing support for the TPB over the theory of reasoned action. The TPB model for predicting career intentions was also tested. As described above, it was anticipated that attitudes and subjective norms would strongly predict career intentions. Further, it was anticipated that perceived control would significantly add to the prediction of career intentions, thereby also providing support for the TPB over the theory of reasoned action.

Having established the relationship between each direct and corresponding belief-based scale, regression analyses were then conducted with belief-based TPB scales as predictors of direct TPB scales. Specifically, multiple regression analyses were conducted for each of the basic TPB models and the relationships between intentions and only belief-based TPB variables for both models were assessed. Direct TPB scales were not further examined: I chose to focus on the belief-based attitudinal, subjective norm, and perceived control items (i.e., indirectly measured) given that the purpose of the current research is to examine the specific attitudinal, subjective norm, and perceived control factors that may be associated with role intentions. Further, it is believed these specific beliefs may offer greater insight into targeted areas for interventions.

For each role intention, a simultaneous multiple regression analysis was conducted with role intentions as the criterion variable and belief-based scales as predictor variables. Results of the regression indicated that all three variables contributed significantly to mothering intentions. The results of this regression analysis are presented in Table 6.5.

A similar simultaneous multiple regression was conducted to assess the TPB model for career intentions. The results of the career intentions basic TPB model multiple regression, entering belief-based attitudes, subjective norms, and perceived control simultaneously as predictor variables of career intentions, were significant and indicated that all variables combined contributed significantly to the prediction of career intentions. However, the results provide only partial support for the TPB model (Hypothesis 3B) given that variance statistics revealed that the subjective norms construct was not a significant predictor of career intentions. Please refer to Table 6.5 for a summary of the results of the regression analysis, including all relevant measures of variance and test statistics.

Examination of the variance accounted for in intentions by each TPB construct revealed expected relationships. Specifically, consistent with Hypothesis 3C, semipartial correlations indicated that mothering attitudes accounted for a larger proportion of variance in mothering intentions than either mothering perceived control or mothering subjective norms and career attitudes accounted for a larger proportion of variance in career intentions than either perceived control or subjective norms. Indeed, the semipartial correlation between mothering intentions and mothering attitudes was significantly ($p < .001$) greater than the semipartial correlations for subjective norms and for perceived control. In contrast, and contrary to my hypothesis, there was no difference between the semipartial correlations between career intentions and each of the TPB constructs for careers.

Table 6.5. ***Multiple regression results for basic TPB models.***

	Variance Statistics						Test Statistics		
Scale	R	R^2	R^2_{adj}	B	β	r_{sp}	F	df_1, df_2	p
Mothering (belief-based)[a]	.73	.53	.53				130.75	3, 345	<.001
Attitudes				1.70	.62	.61			<.001
Subjective norms				0.23	.16	.18			.001
Perceived control				0.37	.17	.19			<.001
Career (belief-based)[b]	.29	.08	.07				10.33	3, 345	<.001
Attitudes				0.30	.26	.17			.002
Subjective norms				0.12	.09	.09			.08
Perceived control				0.24	.18	.18			.001

Note. [a] = Predicting mothering intentions. [b] = Predicting career intentions.

6.8 Preliminary Examination of Predicted Expanded TPB Model Construct Relationships (Hypothesis 4A)

In addition to exploring the relationships between role intentions and the basic TPB model constructs, a primary goal of the research was to test the expanded TPB theoretical model with respect to predicting roles intentions. As stated in Hypothesis 4A, I anticipated that each belief about mothering would be associated with its counterpart belief about careers (i.e., career attitudes and mothering attitudes, career subjective norms and mothering subjective norms, career perceived control and mothering perceived control). Preliminary examination of hypothesized relationships based on Pearson *r* correlations provided in Table 6.2 indicated that there were some notable relationships between TPB measures from different domains (e.g., career subjective norms were related to mothering attitudes and mothering subjective norms as well as to mothering perceived control). Not all predicted relationships were supported: (a) mothering and career attitudes were not correlated ($r = -.10$, $p > .05$); (b) mothering and career subjective norms shared a moderate, positive relationship ($r = .46$, $p < .001$); and, (c) mothering and career perceived control shared a small, positive relationship ($r = .18$, $p < .01$).

In terms of role intentions, with the exception of a weak positive relationship with mothering subjective norms, career intentions did not appear to share any relationship with mothering TPB belief constructs. In contrast, mothering intentions were weakly and negatively associated with career attitudes ($r = -.13$, $p < .01$) and weakly and positively associated with career subjective norms ($r = .20$, $p < .001$).

6.9 Expanded TPB models of mothering and career intentions (Hypotheses 4B and 4C)

The proposed expanded TPB model specifies that mothering-related attitudes, subjective norms, and perceived control directly contribute to mothering intentions *and* career-related attitudes, subjective norms, and perceived control further contribute to mothering intentions. Although it was anticipated that the basic TPB models would strongly predict their respective role intentions, it was also anticipated that other role domain beliefs would significantly add to the prediction of intentions. That is, for example, it was anticipated that mothering beliefs would predict mothering intentions and that career beliefs would add to the prediction of mothering intentions. The same pattern of relationships was anticipated for career intentions.

For each of the expanded models, all belief-based TPB variables were predicted to contribute to mothering and career intentions (Hypotheses 4B and 4C, respectively). However,

the zero-order correlations above (see Table 6.2) suggested only career attitudes and career subjective norms, and not career perceived control, would contribute to the mothering intentions model while only mothering subjective norms, and not mothering attitudes or mothering perceived control, would contribute significantly to the career intentions model. Consequently, I omitted predictor variables that shared nonsignificant zero-order correlations with intentions.

To test the expanded model for mothering intentions, a hierarchical multiple regression was conducted with belief-based mothering TPB constructs entered in Step 1 and belief-based career TPB constructs entered in Step 2. As described above, the results of this hierarchical multiple regression demonstrated that the basic TPB model tested in Step 1 of this regression was significant, $R^2 = .73$, $R^2_{adj} = .53$, $F(3, 345) = 130.75$, $p < .001$. At Step 2 of the regression, the addition of belief-based career attitudes and subjective norms to predict mothering intentions was also significant, $R^2 = .74$, $R^2_{adj} = .54$, $F(5, 343) = 81.78$, $p < .001$; however, the addition of these other-role beliefs only increased the variance accounted for in mothering intentions by 1% ($R^2\Delta = .01$). Further review of the variance coefficients indicated only career attitudinal beliefs ($r_{sp} = -.13$) contributed uniquely and significantly to this increase in variance accounted for in mothering intentions. The hierarchical multiple regression results are presented in Table 6.6.

Similar to mothering intentions, for the career intentions expanded model, all belief-based TPB variables were expected to contribute to intentions. However, the zero-order correlations observed earlier suggested only mothering subjective norms might add to the basic model as neither mothering attitudes nor mothering perceived control were significantly associated with career intentions. The same regression analysis procedure was conducted to test the career intentions expanded TPB model. That is, a hierarchical multiple regression was conducted with belief-based career constructs entered in Step 1 and the belief-based mothering subjective norms construct entered in Step 2. As above, the results of this hierarchical multiple regression demonstrated the basic TPB model tested in Step 1 of this regression was significant, $R^2 = .08$, $R^2_{adj} = .07$, $F(3, 345) = 10.33$, $p < .001$. At Step 2 of the regression, the addition of belief-based mothering TPB variables predicting career intentions was also significant, $R^2 = .11$, $R^2_{adj} = .10$, $F(4, 344) = 9.79$, $p = .002$. The addition of mothering subjective norms accounted for an additional 3% of variance in the model. The results of the hierarchical multiple regression analyses testing the expanded career TPB model are summarized in Table 6.7.

Table 6.6. ***Hierarchical multiple regression results for mothering intentions in expanded TPB model.***

		Variance Statistics							Test Statistics		
	Scale	R	R^2	R^2_{adj}	R^2_{Δ}	B	β	r_{sp}	F	df_1, df_2	p
Step 1	Mothering (belief-based)	.73	.53	.53					130.75	3, 345	< .001
	Attitudes					1.70	.62	.61			< .001
	Subjective norms					0.23	.16	.18			.001
	Perceived control					0.37	.17	.19			< .001
Step 2	Mothering (belief-based)	.74	.54	.54	.01				81.78	5, 343	< .001
	Attitudes					1.66	.60	.60			< .001
	Subjective norms					0.23	.16	.16			.002
	Perceived control					0.50	.23	.24			< .001
	Career (belief-based)										
	Attitudes					-.34	-.11	-.13			.01
	Subjective norms					-0.10	-.05	-.06			.30

Note. Step 1 is identical to the mothering basic TPB model presented in Table 6.5.

Table 6.7. ***Hierarchical multiple regression results for career intentions in expanded TPB model.***

		Variance Statistics							Test Statistics		
	Scale	R	R^2	R^2_{adj}	R^2_{Δ}	B	β	r_{sp}	F	df_1, df_2	p
Step 1	Career (belief-based)	.29	.08	.07					10.33	3, 345	<.001
	Attitudes					0.30	.16	.17			.002
	Subjective norms					0.12	.09	.09			.08
	Perceived control					0.24	.18	.18			.001
Step 2	Career (belief-based)	.33	.11	.10	.03				9.79	4, 344	.002
	Attitudes					0.48	.26	.23			<.001
	Subjective norms					-0.01	-.01	-.00			.94
	Perceived control					0.21	.16	.16			.003
	Mothering (belief-based)										
	Subjective norms					0.19	.21	.17			.002

Note. Step 1 is identical to the career basic TPB model presented in Table 6.5.

6.10 Specific Hypothesized Relationships for TPB Constructs (Hypotheses 5A-5D)

In addition to testing the basic TPB and expanded TPB models, a number of specific relationships for TPB constructs were hypothesized. I anticipated that women who intended to have children would express more positive and fewer negative attitudes about mothering (i.e., higher overall attitudes) and would emphasize perceived benefits over costs relative to women who intended to be childfree (Hypothesis 5A). The hypothesized relationships were examined in two stages. First, as described above, mothering intentions and mothering attitudes (belief-based) shared a strong positive relationship, indicating that women with higher mothering intentions also hold more positive attitudes towards mothering. Second, the overall mothering attitudes for intended mothers and intended childfree women (i.e., based on dichotomous mothering intentions item) were compared using independent samples *t* tests. Women who wanted children, compared to women intending to be childfree, also had significantly more positive attitudes towards mothering, $t(54.21) = 13.24$, $p < .001$, Cohen's $d = 2.32$. Attitudes towards careers were also compared given that it was anticipated that women who intended to be childfree would have more positive attitudes towards careers than their mothering intended counterparts. Women who intended to be childfree had slightly more positive attitudes towards careers than those who intended to become mothers, $t(343) = -2.28$, $p = .02$, Cohen's $d = 0.34$. See Table 6.8 for means and standard deviations of attitudes for these two groups of women.

I hypothesized that particular subjective norm referents would be more important to young women's role intentions. Specifically, I anticipated that mothers would be the most important social referent for young women in both role domains (Hypothesis 5B). This hypothesis was partially supported. As provided in Table 6.9, Pearson *r* correlations and partial correlations controlling for all other social referents suggested mothers and fathers shared the strongest relationship with women's mothering-role intentions. However, statistical comparisons of the partial correlations suggest that the effect for mothers did not significantly differ from fathers or the general category of "most people" ($p = .21$). Moreover, it appears this minimal independent importance of mothers and fathers as social referents is limited to young women's mothering intentions: Although fathers appeared to only account for a small amount of variance in career intentions, analyses comparing partial correlations for subjective referents and career intentions revealed there was no apparent difference between the social referents for women's career intentions (see Table 6.10).

Table 6.8. ***Means and standard deviations of belief-based mothering and career attitudes for intended mothers and intended childfree women.***

	Intention			
	Intended Childfree (n = 31)		Intended Mothers (n = 273)	
Attitudes	*M*	*SD*	*M*	*SD*
Mothering (belief-based)	11.36[a]	6.07	23.38[a]	4.12
Career (belief-based)	28.20[b]	5.96	26.22[b]	5.51

Note. [a] = significantly differed. [b] = significantly differed.

Table 6.9. ***Pearson r correlations and partial correlations results for mothering intentions and belief-based subjective norms.***

Mothering Intentions N = 349	Mother	Father	Family	Friends	Society	Most People
Pearson *r* correlation	.32***	.30***	.23***	.22***	.19***	.11*
Partial correlation	.13**	.09*	-.02	.01	-.06	.09

Note. Partial correlations between mothering intentions and each subjective norm referent while holding all other subjective norm referents constant. Semipartial correlations produce results equivalent to a series of hierarchical regressions entering all other social referents in step one and the referent of interest at step two. All correlations are 1-tailed.

Table 6.10. ***Pearson r correlations and partial correlations results for career intentions and belief-based subjective norms.***

Career Intentions N = 349	Mother	Father	Family	Friends	Society	Most People
Pearson *r* correlation	.13**	.22***	.02	.16**	-.10*	-.06
Partial correlation	.07	.08	.08	.07	-.08	-.05

Note. Partial correlations between mothering intentions and each subjective norm referent while holding all other subjective norm referents constant. Semipartial correlations produce results equivalent to a series of hierarchical regressions entering all other social referents in step one and the referent of interest at step two. All correlations are 1-tailed.

I anticipated lower perceived control would be associated with higher perceived WFC (Hypothesis 5C). Contrary to expectations, no conflict scales were associated with belief-based mothering or career constructs to a high degree (see Table 6.11). Neither mothering nor career perceived control was associated with anticipated conflict. Indeed, only belief-based career attitudes were associated with anticipated total WFC and with family-to-work conflict, but these relationships were small (r = -.18 and r = .15, respectively). Career intentions were also weakly

but significantly and negatively associated with anticipated WFC and work-to-family conflict. Family-to-work conflict was not strongly associated with any of the variables.

Following from the TPB premise that attitudes encompass various personality characteristics and relevant beliefs that could shape one's attitudes—and, therefore, intentions—I anticipated attitudes would share strong positive relationships with salience, gender traits, and anticipated WFC; however, contrary to the TPB, I anticipated that these literature-derived variables would also uniquely contribute to role intentions (Hypothesis 5D). Seeking parsimony, and in light of the results of the above examinations of the expanded models,
I chose to test this hypothesis considering only the basic TPB model (i.e., using only role-congruent TPB constructs) and salience, gender traits, and WFC variables. Figures 6.6 and 6.7 depict the basic TPB model and the additional pathways I hypothesized for mothering intentions and career intentions, respectively.

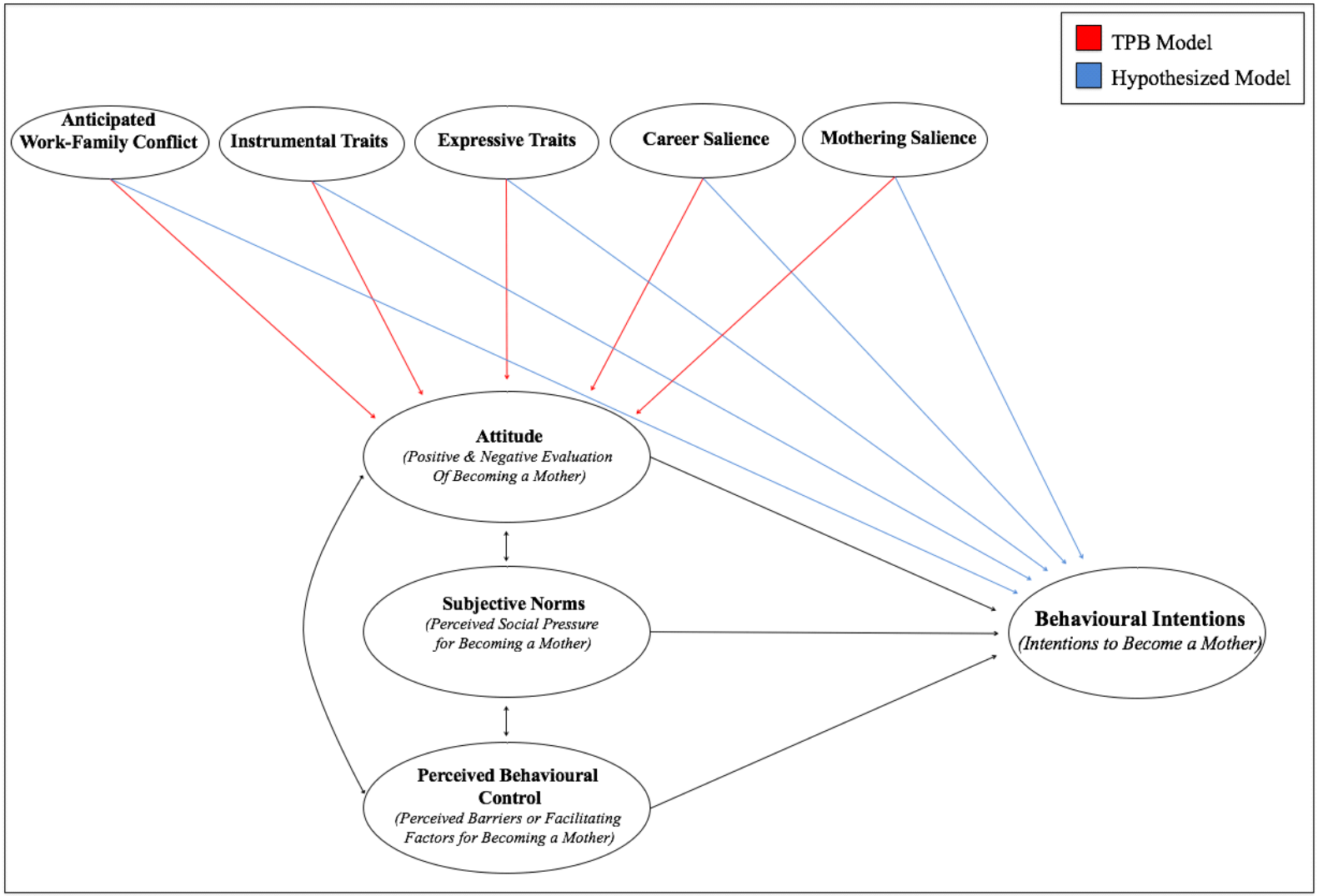
The hypothesized relationships were tested in three stages. First, I assessed the relationships between intentions and the literature-derived variables using zero-order correlations. As noted previously, mothering role intentions shared a large positive relationship with mothering salience and a weak negative relationship with career salience; additionally, mothering intentions shared a moderate positive relationship with expressive traits and no relationship with instrumental traits nor anticipated WFC (see Table 6.11). As noted previously, career-role intentions shared a large positive relationship with career salience and no relationship with mothering salience; career intentions also shared a small positive relationship with instrumental traits, a small negative relationship with WFC, and no relationship with expressive traits. These correlations are presented in Table 6.11. The nonsignificant findings for instrumental traits and mothering attitudes in Table 6.12 are not surprising in light of previous researchers' findings (e.g., Yaremko & Lawson, 2007). WFC also did not appear to account for any variance in mothering attitudes, suggesting anticipated conflict may not shape mothering attitudes. Based on these correlations, WFC and instrumental traits were omitted from further analyses because neither was significantly related to mothering intentions nor mothering attitudes. In contrast, for career attitudes and gender traits, a somewhat different pattern of relationships emerged. As can be seen in Table 6.12, career salience and instrumental traits both accounted for a small proportion of variance in attitudes while expressive traits did not appear to contribute to the prediction of attitudes. Further, career attitudes and mothering salience were

Table 6.11. ***Zero-order correlations between conflict scales, intentions, and belief-based mothering and career TPB constructs.***

		1	2	3	4	5	6	7	8	9	10	11	12
1	Work-family conflict												
2	Family to work conflict	.69***											
3	Work to family conflict	.68***	-.06										
4	Mothering intentions	.07	.07	.03									
5	Career intentions	-.21***	-.27***	-.01	.03								
6	Mothering attitudes (belief-based)	.08	.03	.08	.71***	-.07							
7	Mothering subjective norms (belief-based)	.06	.00	.08	.29***	.11*	.33***						
8	Mother perceived control (belief-based)	-.03	.02	-.05	.26***	-.10	.26***	-.41***					
9	Career attitudes (belief-based)	-.18***	-.09	-.15**	-.13*	.20***	-.10	-.44***	.50***				
10	Career subjective norms (belief-based)	.08	.07	.04	.19***	.12*	.27***	.46***	.03	.03			
11	Career perceived control (belief-based)	-.06	-.12	.04	.08	.22***	.17***	.10	.18***	.16**	.12*		
12	Instrumental Traits	-.02	-.09	.07	.06	.16**	.01	.07	.11*	.13*	.03	.24***	
13	Expressive Traits	.04	.03	.02	.34****	-.02	.35****	.09	.31***	.15**	.19***	.10	.29***

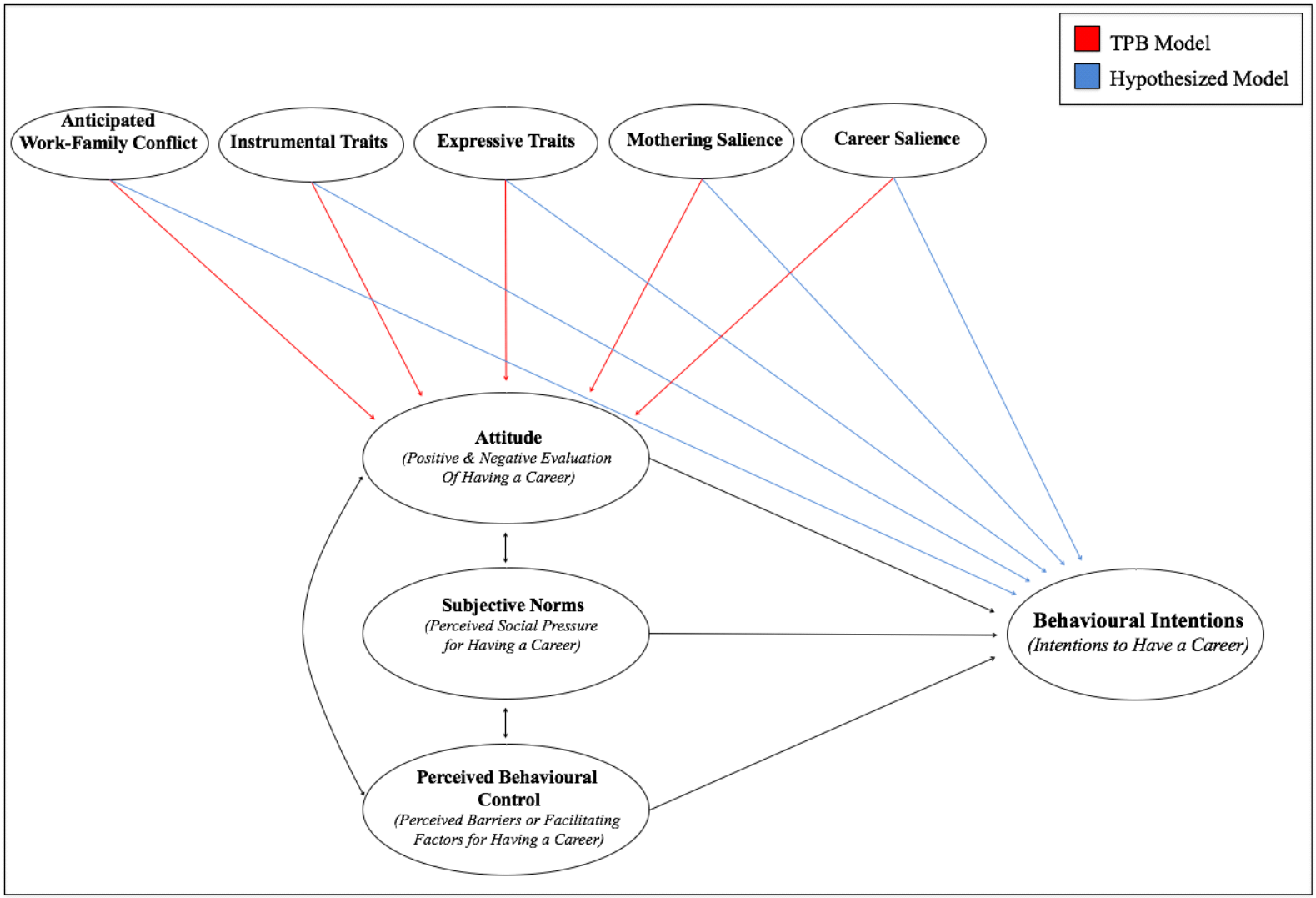
Note. *$p < .05$, **$p < .01$, ***$p < .001$. $N = 349$

Figure 6.6. ***TPB model versus hypothesized model for mothering intentions.***



Note. The hypothesized model includes all of the pathways posited by the TPB model.

Figure 6.7. ***TPB model versus hypothesized model for career intentions.***



Note. The hypothesized model includes all of the pathways posited by the TPB model.

weakly negatively correlated. In contrast to mothering attitudes, WFC shared a weak negative relationship with career attitudes. Consequently, all literature derived variables (with the exception of expressive traits) were retained for further career analyses given significant one-tailed correlations..

Second, I regressed the literature-derived variables onto each belief-based attitude construct to assess the strength of the relationships between these variables. The results of the simultaneous regressions for mothering attitudes and career attitudes are presented in Table 6.13. Mothering salience accounted for a large proportion of the variance of mothering attitudes (r_{sp} = .71, p < .001). The relationships between mothering attitudes and both career salience and expressive traits were also significant in the simultaneous multiple regression. The pattern of results suggests there is some shared variance between literature-derived variables and mothering attitudes, but these factors are also not

Table 6.12. ***Zero-order correlations for literature-derived variables by attitudes and intentions.***

N = 349	Mothering Salience	Career Salience	Expressive Traits	Instrumental Traits	WFC
Mothering					
Intentions	.85***	-.24***	.34***	.06	.07
Attitudes (belief-based)	.76***	-.25***	.35***	.01	.08
Career					
Intentions	-.10*	.48***	-.02	.16***	.21***
Attitudes (belief-based)	-.10*	.22***	.13**	.15**	-.18***

Note. *p < .05, **p < .01, ***p < .001 (1-tailed). N = 349

Table 6.13. ***Regression results predicting attitudes from literature-derived variables.***

		Variance Statistics					Test Statistics		
Regression Type	R	R^2	R^2_{adj}	B	B	r_{sp}	F	df_1, df_2	p
Mothering Attitudes	.77	.59	.59				166.14	3, 345	< .001
Mothering salience				0.49	.71	.71			< .001
Career salience				-.14	-.08	-.14			.01
Expressive traits				1.83	.10	.13			.02
Career Attitudes	.29	.09	.07				7.96	4, 344	< .001
Mothering salience				-0.04	-.06	-.06			.25
Career salience				.26	.18	.17			.001
Instrumental traits				1.60	.11	.12			.03
WFC				-1.79	-.15	-.15			.005

perfectly related. That is, the results of both regressions predicting attitudes suggest that attitudes may not entirely capture the relationship between these factors and career intentions, as the TPB proposes.

For the third and final stage of testing the hypothesis that attitudes do not entirely capture other potentially relevant variables, two hierarchical multiple regressions were conducted in order to assess unique variance in intentions attributable to TPB constructs and the additional variance in intentions attributable to literature-derived variables, as depicted in Figures 6.6 and 6.7. In Step 1 of each of these regressions, TPB constructs were regressed onto intentions, mirroring the original test of the TPB model. In Step 2, while controlling for TPB constructs, relevant role salience, gender traits, and WFC were regressed onto intentions. The results of the mothering intentions and career intentions hierarchical regressions are presented in Tables 6.14 and 6.15.

For mothering intentions, the model at Step 2 was significant with TPB constructs and literature-derived variables entered. The amount of variance accounted for in mothering intentions—over and above that accounted for by mothering TPB constructs—was substantial (R^2_{Δ} = .21). Step 2 of the regression model indicated that mothering salience contributed to the prediction of mothering intentions over and above mothering TPB constructs (r_{sp} = .66, p < .001)

Table 6.14. ***Hierarchical regression results with TPB constructs and mothering salience, career salience, and expressive traits predicting mothering intentions.***

	Variance Statistics							Test Statistics		
Regression Type	R	R^2	R^2_{adj}	R^2_{Δ}	B	B	r_{sp}	F	df_1, df_2	p
Mothering Intentions										
Step 1	.73	.53	.53					130.75	3, 345	< .001
MA					1.70	.62	.61			< .001
MSN					0.23	.16	.18			.001
MPC					0.37	.17	.19			< .001
Step 2	.86	.74	.74	.21				26.81	7, 341	< .001
MA					0.34	.13	.15			.005
MSN					0.08	.06	.09			.11
MPBC					0.15	.07	.10			.06
Mothering salience					1.35	.71	.66			< .001
Career salience					-0.20	-.04	-.08			.13
Expressive traits					0.96	.02	.04			.52

Note. Step 1 is identical to the regression examining the basic TPB model for mothering intentions. Mothering salience, career salience, and expressive traits were entered simultaneously in Step 2, providing an estimate of the contributions of these variables to the variance accounted for in intentions over and above TPB constructs. MA = belief-based mothering attitudes; MSN = belief-based mothering subjective norms; MPBC = belief-based mothering perceived control

while career salience and expressive traits did not. That is, only mothering salience accounted for some unique variance in mothering intentions while holding TPB constructs constant. The mothering intentions hierarchical regression results provide support for the hypothesis that the TPB does not entirely account for all relevant variables via the construct of mothering attitudes, while also providing support for the premise that the attitudes construct does encompass many other potentially relevant personality characteristics and attitudinal factors.

The hierarchical regression examining career intentions as predicted by TPB constructs and literature-derived variables was significant at both steps (see Table 6.15). In contrast to mothering intentions, at Step 2 career salience and anticipated WFC both contributed to an increase in variance accounted for in career intentions over and above the contributions of TPB constructs. Specifically, the addition of these variables increased the variance accounted for substantially ($R^2_{\Delta} = .22$). Although career salience accounted for less variance in career intentions ($r_{sp} = .44$, $p < .001$) than mothering salience accounted for in mothering intentions ($r_{sp} = .66$, $p < .001$), the amount of variance accounted for by career salience was still moderate

Table 6.15. ***Hierarchical regression results with belief-based career TPB constructs and mothering salience, career salience, instrumental traits, and WFC predicting career intentions.***

	Variance Statistics							Test Statistics		
	R	R^2	R^2_{adj}	R^2_{Δ}	*B*	β	r_{sp}	*F*	df_1, df_2	*p*
Career Intentions										
Step 1	.29	.08	.07					10.33	3, 345	< .001
CA					0.29	.16	.17			.002
CSN					0.12	.09	.09			.08
CPC					0.24	.18	.18			.001
Step 2	.55	.30	.29	.22				26.81	7, 341	< .001
CA					0.07	.04	.04			.44
CSN					0.07	.05	.06			.29
CPBC					0.23	.18	.20			< .001
Mothering salience					-0.01	-.01	-.01			.88
Career salience					1.18	.44	.44			< .001
Instrumental traits					1.85	.07	.08			.14
WFC					-3.03	-.14	-.16			.003

Note. Step 1 is identical to the regression examining the basic TPB model for career intentions. Mothering salience, career salience, instrumental traits, and WFC were entered simultaneously in Step 2, providing an estimate of the contributions of these variables to the variance accounted for in intentions over and above TPB constructs. CA = belief-based career attitudes; CSN = belief-based career subjective norms; CPBC = belief-based career perceived control; WFC = work family conflict

according to Cohen's (1988) standards. In contrast, WFC accounted for a small proportion of variance in career intentions (r_{sp} = -.16, p = .003) beyond that attributable to TPB constructs. Neither mothering salience nor instrumental traits provided any additional predictive utility, suggesting that these variables may indeed be captured by the TPB model.

Finally, given the number of hypotheses and results presented, summary tables with hypotheses, analysis methods, and results are presented below. Please see Tables 6.16 to 6.20.

Table 6.16. ***Summary of role intentions hypotheses, analysis methods, and results.***

Hypotheses	Analysis Method(s)	Results
1A) Most women will express intentions to pursue a career.	Frequency	Supported: 98.6% expressed intentions to pursue a career.
1B) Most women will express intentions to become mothers.	Frequency	Supported: 86.2% expressed intentions to become mothers.
1C) Most women will express intentions to pursue both roles.	Frequency	Supported: 84.8% expressed intentions to pursue both roles.
1D) (i) Mothering intentions will predict intentions to have children at an earlier age; (ii) greater career intentions will be associated with intentions to delay motherhood.	Zero-order correlation	i) Supported: Mothering intentions were associated with earlier intended motherhood. ii) Not supported: Career intentions were not associated with timing of intended motherhood.
1E) Role intentions will be positively associated with corresponding role salience.	Zero-order correlation	Supported: Mothering intentions and mothering salience were strongly and positively correlated and career intentions and career salience were moderately and positively correlated.
1F) Intentions and gender traits will be positively correlated: (i) Expressive traits will be positively associated with mothering intentions and (ii) instrumental traits will be positively associated with career intentions.	Zero-order correlation	i) Supported: Mothering intentions and expressive traits were moderately and positively correlated. ii) Supported: Career intentions and instrumental traits were weakly and positively correlated.
1G) (i) Women who intend to be childfree will report more instrumental traits and (ii) women who intend to be mothers will report more expressive traits.	Independent samples *t* tests	i) Supported: Intended mothers reported more expressive traits. ii) Not supported: Intended childfree women did not report more instrumental traits.

Table 6.17. ***Summary of role salience hypotheses, analysis methods, and results.***

Hypotheses	Analysis Method(s)	Results
2A) Career role salience will be negatively associated with mothering role salience.	Zero-order correlation	Supported: Role saliences were weakly and negatively correlated.
2B) Career and mothering attitudes will be positively associated with their respective role salience.	Zero-order correlation	Supported: Mothering attitudes were strongly and positively associated with mothering role salience while career attitudes were weakly and positively associated with career role salience.
2C) Role salience in one domain will be associated with lower levels of positive attitudes with respect to the other role domain.	Zero-order correlations	Partial support: Career salience and mothering attitudes were weakly and negatively related while mothering salience and career attitudes were not related.
2D) Reproductive decisions will be associated with (i) mothering role salience and (ii) career role salience.	Zero-order correlations	i) Supported: Mothering salience was negatively related to anticipated age at first birth and positively related to number of children, anticipated distress if infertile, likely use of ART, and intentions to rely on ART. ii) Supported: Career salience was positively related to anticipated age at first birth and negatively related to number of children, anticipated distress if infertile, and likely use of ART.
2E) (i) Mothering role salience will be correlated with expressive traits and (ii) career role salience will be positively correlated with instrumental traits. (iii) Greater dual-role salience will be associated with greater expressive and instrumental traits.	Zero-order correlation; ANOVAs	i) Supported: Mothering role salience and expressive traits were moderately and positively correlated while career role salience and expressive traits were weakly and negatively correlated. ii) Not supported: Neither career nor mothering role salience were related to instrumental traits. iii) Not supported: Only women with high career role and low mothering role salience women reported fewer expressive traits.
2F) (i) High dual role salience will be associated with high anticipated work-family conflict. (ii) High single role salience will be associated with less anticipated work-family conflict. (iii) Differences in work-to-family and family-to-work conflict will be observed based on role salience.	ANOVAs	i) Not supported: High dual role salience was not associated with higher anticipated WFC; rather, women with low dual role salience expressed the highest levels of anticipated WFC. ii) Not supported: Single role salience did not predict lower anticipated WFC (did not differ from high dual role salience). iii) No differences were observed in anticipated work-to-family and family-to-work conflict, regardless of role salience.

Table 6.18. ***Summary of basic TPB models hypotheses, analysis methods, and results.***

Hypotheses	Analysis Method(s)	Results
3A) The TPB model will be supported for mothering intentions.	Simultaneous multiple regressions	Supported: Attitudes, subjective norms, and perceived control all significantly contributed to the prediction of mothering intentions.
3B) The TPB model will be supported for career intentions.	Simultaneous multiple regressions	Partial support: Attitudes and perceived control, but not subjective norms, contributed to the prediction of career intentions.
3C) Attitudes will be the strongest predictors of (i) mothering intentions and (ii) career intentions.	Simultaneous multiple regressions	i) Supported: Mothering attitudes accounted for the largest proportion of variance in mothering intentions. ii) Not supported: Career attitudes and perceived control did not differ in terms of the variance accounted in career intentions.

Table 6.19. ***Summary of expanded TPB models hypotheses, analysis methods, and results.***

Hypotheses	Analysis Method(s)	Results
4A) Corresponding career and mothering TPB constructs will be related such that (i) attitudes will be negatively related, (ii) subjective norms will be positively related, and (iii) perceived control will be positively related.	Zero-order correlations	i) Not supported: No relationship between attitude constructs. ii) Supported: Moderate, positive relationship between subjective norm constructs. iii) Supported: Weak, positive relationship between perceived control constructs.
4B) The expanded TPB model for mothering intentions will provide better prediction of mothering intentions than the basic TPB model (i.e., account for a greater proportion of variance in mothering intentions).	Zero-order correlation; Multiple hierarchical regression	Partial support: Not all career TPB constructs contributed to mothering intentions; however, the expanded model was significant, with career attitudes contributing to mothering intentions over and above mothering TPB constructs.
4C) The expanded TPB model for career intentions will provide better prediction of career intentions than the basic TPB model (i.e., account for a greater proportion of the variance in career intentions).	Zero-order correlation; Multiple hierarchical regression	Partial support: Not all mothering TPB constructs contributed to career intentions; however, the expanded model was significant, with mothering subjective norms contributing to career intentions over and above career TPB constructs.

Table 6.20. ***Summary of specific TPB hypotheses, analysis methods, and results.***

Hypotheses	Analysis Method(s)	Results
5A) Women who intend to have children will express more positive mothering attitudes. Women who intend to be childfree will have more positive attitudes towards careers.	Zero-order correlation; Independent samples *t* tests	Supported: Strong, positive correlation between mothering intentions and mothering attitudes. Intended childfree women's attitudes were significantly less positive than those of intended mothers.
5B) Mothers are expected to be more important social referents for young women for (i) mothering intentions and (ii) career intentions.	Zero-order correlations; partial correlation	i) Not supported: Mothers, fathers, and "most people" shared the relationship with mothering intentions. ii) Not supported: No social referent held greater relative importance for career intentions.
5C) Higher perceived work-family conflict will be associated with lower perceived control for mothering and career intentions.	Zero-order correlations	Not supported: No conflict scales were associated perceived control.
5D) The TPB will not entirely account for the influence of other intentions-related variables (e.g., role salience, gender traits, WFC); these variables will be partially accounted for by the model, but they will also uniquely (directly) contribute to role intentions.	Correlation; Multiple simultaneous regressions; Hierarchical multiple regressions	Partial support: Many variables were accounted for by attitudes; however, the TPB did not entirely account for all relevant variables contributing to intentions. Mothering salience predicted mothering intentions over and above the mothering TPB constructs; career salience and WFC predicted career intentions over and above the career TPB constructs.

Chapter 7: Main Study Discussion

With changes in their fertility and career patterns and the centrality of career- and mothering-role conflict for women, research seeking to better understand the factors that influence such decisions has become increasingly prevalent and needed. When and if women choose to engage in the workforce and parenting has meaningful implications for how they engage in each role as well as for employers and society more broadly. The necessity of research examining the interaction between roles is highlighted by the fact that Söderberg, Lundgren, Christensson, and Hildingsson (2013) found women who were currently pursuing education most endorsed the importance of fertility in the future. Yet, delaying parenthood in pursuit of education and careers can have substantial consequences for women, as those who tend to delay childbearing until late in their reproductive lives may have fewer children than intended or may, ultimately, be childless (McFalls, 1990), the latter of which can have implications for psychological wellbeing (Koert & Daniluk, 2017). Indeed, researchers have found that women must alter their mothering intentions throughout their lifetime, resulting in the majority not achieving their intended family size (Berrington & Pattaro, 2014; Liefbroer, 2009; Porter et al., 2006; Testa, 2012). Although the interconnected nature of career and mothering decisions may be evident, there is a relative dearth of theory-driven research that examines these two roles in conjunction. Consequently, given the potential influence each role has over engaging in the other, the aim of this research was to investigate both role intentions using the theory of planned behaviour (TPB). The present research is the first to apply the TPB to simultaneously investigate the factors that could contribute to young women's mothering and career intentions and to consider how beliefs and background factors related to each role may influence intentions to engage in the other role.

7.1 Role Intentions and Salience

Although past researchers found women valued their parental roles over their career roles (Friedman & Weissbrod, 2005), many contemporary women choose to engage in both roles. Indeed, Uppal (2015) reported that in 2014, when considering households with children under the age of 16 years in Canada, 55% of families were comprised of two working parents and 16% were comprised of single working mothers, which is up from just 33% and 8%, respectively, compared to 1976. Given the trends observed in increased workforce participation for women (Ferrao, 2010), emphasis on personal development and women's expression of autonomy (Balen,

2005; Gillespie, 2003), as well as continued emphasis on the role of motherhood as central to women's identities (Jamieson et al., 2010; Katz-Wise et al., 2010), in the current study it was anticipated that the vast majority of the women would express high salience for and intentions to engage in both roles, despite the potential conflict between these roles. In line with past research that indicates more educated women are just as keen, or more so, to have children as lower educated women (Heiland et al., 2005; Weston et al., 2004; Yu, 2006), the majority (84.8%) of the current sample of educated young women expressed intentions to pursue both mothering and career roles, and they placed great importance on engagement in both roles. Yaremko and Lawson (2007) found mothering intentions and salience were strongly correlated (r = .66) and the current study, similarly, found a strong relationship (r = .85) between mothering intentions and mothering salience. Career salience and career intentions were also moderately positive related (r = .48) for women in the current study. However, mothering salience and career salience were weakly and negatively correlated, suggesting that at some level women who highly value one role may, correspondingly, value the other role slightly less.

Although most women were inclined towards mothering and careers in the current sample, there were differences in the strength of their intentions, the salience of each role, and their intended fertility patterns. Specifically, those who had stronger mothering intentions expressed intentions to bear children at earlier ages. Role intentions and role salience also corresponded to the number of children that women intended to have as well as the distress women anticipate experiencing if unable to have children and intentions to use (and even rely on) fertility treatments. These relationships between role intentions, role salience, and intended fertility patterns support the rationale that is at the crux of the present dissertation research: That is, it is essential to explore both roles in conjunction, as greater salience related to careers could decrease the number of children women desire and greater mothering intentions and salience could increase the potential distress women experience if they are unable to have children, their intended use of fertility treatments, as well as their intended reliance on fertility treatments.

Miles et al. (2009) investigated the relationship between gender traits and role salience in an effort to understand distress experienced by women being treated for infertility. They proposed that women with greater instrumental traits and work role salience may experience less distress when pursuing fertility treatments given the availability of another role upon with which they could identify beyond motherhood. These authors observed a significant relationship

between work-role salience and instrumental traits. However, Miles et al. reported that distress was not associated with either career salience or instrumental traits—although, in the present study, there was a significant relationship between career-role salience and anticipated distress if infertile, such that greater career salience was associated with less anticipated distress. The conflict between Miles et al.'s findings and the findings in the current study might be explained by the different life stage of the women studied. That is, Miles et al. examined *experienced* distress expressed by women currently pursuing treatment for infertility and the present study examined *anticipated* distress in women if they were determined to be infertile in the future. As such, young women with higher career salience, who have not yet engaged in their careers or attempted to conceive, may believe that they would experience less distress if they were infertile. Nonetheless, it is still possible that their actual experiences of distress, if they were to be infertile in the future, would be quite different.

Not surprisingly, given the anticipated distress—or lack thereof—associated with salience, role salience was also associated with positive role attitudes. The salience of each role was associated with the corresponding role attitudes endorsed by the young women in the current sample. Specifically, mothering attitudes were more positive for women with greater mothering salience and career attitudes were more positive for individuals with greater career salience. Moreover, higher career salience translated into less positive mothering attitudes whereas mothering salience was not associated with career attitudes, suggesting that women who place greater meaningfulness and importance on the career role may feel much less positively about mothering, potentially perceiving the mothering role to be much more costly. In contrast, the salience of the mothering role does not appear to detract from how women perceive career role, as mothering salience and career attitudes did not share a significant relationship. However, when attitudes were examined across women who intended to be mothers and women who intended to be childfree, mothering attitudes were significantly more positive for the former and less positive for the latter and career attitudes were significantly less positive for the former and more positive for the latter.

Despite the above findings, which suggest higher career salience women might perceive more costs and fewer benefits associated with the mothering role, women whose salience was high for both roles did not anticipate greater work-family conflict (WFC). Indeed, contrary to my hypothesis, women with low dual-role salience expressed the highest levels of anticipated WFC.

There are various possible explanations for this pattern of findings. Many of the women in the current study expressed quite positive attitudes about both mothering and careers. In line with Campo (2005), it is possible that women with higher salience for both roles hold overly favourable—and potentially unrealistic—beliefs about being able to engage in both roles. That is, the women in the current sample may subscribe to the myth of being able to "have it all" without compromising either role. Moreover, even if there is anticipated conflict, others have found the majority of women place great levels of importance on both roles (e.g., Heaton & Jacobson, 1999; McDonald et al., 2011; Schroeder et al., 1992). Indeed, others have reported that many girls and young women also express intentions to engage in both career and motherhood roles (e.g., Cook, 1993; McDonald et al., 2011; Schroeder et al., 1992; Söderberg et al., 2013). The high levels of salience and intentions towards both roles, positive attitudes towards both roles, and the overall lower anticipated WFC—despite the potential for being primed to consider the possible conflict between roles in the current study by the very nature of asking women to reflect on both roles—suggests that the fairy tale of one day becoming a multirole superwoman who has and does it all is very much alive and well.

Nevertheless, given that the results only provide correlational not causational data, it is possible that these factors bidirectionally influence each other. Women who express lower salience for both roles may place less importance on both roles *because* they anticipate there would be significant conflict between both roles. Indeed, this might be consistent with DeWall, Baumeister, Chester, and Bushman's (2016) meta-analytic findings that anticipated emotions guide behaviour and judgment. As such, anticipated conflict could contribute to lower emphasis on roles and decisions to not engage in particular roles, which might explain the relationship between higher anticipated conflict and lower career intentions. It may also be that because they may be less emotionally attached to these roles (i.e., lower salience for both roles), they may be better able to objectively evaluate the potential future conflicts between both roles as well—akin to Alloy and Abramson's (1979) concept of depressive realism and in line with research on emotions, reasoning, and decision making that suggests less emotionality increases reasoning and objectivity (Blanchette & Richards, 2010). Another similar possibility relates to Festinger's (1957) theory of cognitive dissonance. It is possible that women with the lowest salience for both roles perceived the highest anticipated WFC because they are less invested in each role and may, therefore, experience less conflict between their role desires, translating into less need to justify

possible "inconsistent" beliefs by minimizing the extent of possible future conflict between roles—whereas women who emphasize the importance of both roles may have to try to reconcile their desires with anticipated WFC by minimizing or ignoring these inconsistencies so that they can justify having and doing it all, engaging in both mothering and career roles.

7.2 Gender-Role Traits

Past research has demonstrated relationships between particular gender-role traits, role salience, and role intentions (Golmakani et al., 2015; McQuillan et al., 2014; Yaremko & Lawson, 2007). Social role theory (Eagly, 1987) suggests people will behave in a way that is consistent with stereotypes related to the gender-role traits with which those individuals identify. However, with shifts in women's role engagement over the past several decades (Ferrao, 2010), it was of interest to determine whether or not the gender-role traits of young women in the current sample are associated with their intentions.

In light of past findings consistent with social role theory (e.g., Kaufman, 2000; Yaremko & Lawson, 2007), it was expected in the current study that women who have high instrumental traits would emphasize their career role while women who have high expressive traits would emphasize the motherhood role. The relationship between expressive traits and mothering role salience was further supported in the present study: Women who indicated that they had more expressive traits also expressed more mothering-role salience. However, the current study results did not support the relationship between instrumental traits and career salience, providing no support for social role theory for career-role orientation. Instead, expressive traits were negatively associated with career salience. Kerpelman and Schvaneveldt (1999) found a similar pattern of results wherein there were no differences in instrumental traits across women who were family versus career oriented, but women who were more family oriented had more expressive traits. The pattern of results in the current study suggests it is not the presence of instrumental traits that contributes to women's perceived importance for mothering and career roles; rather, it is the degree of expressive traits that may predict both mothering and career salience. That is, the extent to which a woman endorses expressive traits may increase or decrease her perception of the importance of the mothering role and, to a potentially lesser degree, the career role. To that end, when considering women's dichotomized intentions with respect to mothering (i.e., intended mothers and intended childfree women) expressive traits, but not instrumental traits, differed for these women.

Although there are few studies that explicitly examine career salience and gender-role traits, many of which are quite dated given that it is not an area of prolific study, past researchers have found instrumental traits are associated with various aspects of careers, including achievement motivation (Orlofsky & Stake, 1981), career progression (Wong, Kettlewell, & Sproule, 1985), organizational identification (Liu & Ngo, 2017), commitment (Marshall & Wijting, 1980), satisfaction (Ngo, Foley, Ji, & Loi, 2014), and career engagement after the birth of children (Gaddy, Glass, & Arnkoff, 1983). However, as noted above, in contrast to my hypothesis and social role theory, instrumental traits were not associated with role salience in the current study. One possible explanation for this might be related to how instrumental traits might be distributed in the population now given that "male" traits have been increasingly adopted by women since the Bem Sex Role Inventory was first published in 1974; however, a recent meta-analysis revealed changes in trait adoption plateaued in 1993, with women expressing no further increases in an androgynous traits since that time (Donnelly & Twenge, 2017). Moreover, between 1993 and 2012, college women tended to endorse expressive (i.e., feminine) traits much less (Donnelly & Twenge). In the current study, about half of the sample endorsed higher instrumental traits, suggesting that for many this division of "male" (instrumental) and "female" (expressive) may not be appropriate in this population. Consequently, the patterns observed in the present sample and by Donnelly and Twenge (2017) might suggest that increasingly women are devaluing traditional femininity or the measure does not reflect contemporary patterns in gender traits. As such, the designation of the trait items on the inventory as "male" or "female" may be dated and no longer accurate for this generation of emerging adults, suggesting that it may be useful to re-examine and potentially develop a new scale that may more accurately identify trait differences across (dichotomized) gender.

Nevertheless, stepping back from whether or not such traits accurately reflect "gendered" perspectives and, instead, considering evidence that instrumental traits (e.g., traits such as competitiveness, independence, acting as a leader, assertiveness) tend to be more valued in many professional roles (Alewell, 2013), the finding that career salience is not related to instrumental traits is, nonetheless, somewhat surprising. The lack of relationships between role salience and instrumental traits does not seem likely to be the result of a lack of variability in instrumental traits in the sample; indeed, the overall means and standard deviations of instrumental and expressive traits expressed by young women in the sample were quite similar. The presence or

absence of instrumental traits might not be associated with the value placed on the career role for these young women; however, the null finding for instrumental traits and career salience might be attributable to the fact that the vast majority of these women highly valued the career role and the variability of career salience (based on the standard deviation) was less than half that of mothering salience. Nevertheless, instrumental traits were significantly, but weakly, associated with career intentions, suggesting that perhaps at some level instrumental traits may be associated with greater intentions to pursue a career despite not being associated with greater importance placed on the role itself. Indeed, others have found a relationship between instrumental traits and the *types* of careers women pursue (Gupta et al., 2009).

7.3 Work-Family Conflict

As noted above, the level of anticipated WFC did not differ for most women who expressed high salience for at least one role. That is, anticipated WFC was only elevated for women whose salience for both roles was lowest. It was hypothesized that anticipated WFC might be associated with women's sense of control over their ability to achieve their intentions. For example, it was thought that women who anticipated high conflict between the roles might also perceive this conflict as potentially inhibiting their ability to realize their intentions (i.e., perceived control), therefore, shaping their intended behaviours. Nevertheless, the results indicate these factors are not associated: Anticipation of WFC was not related to perceived control for either role. Although not explicitly part of my hypotheses, anticipated WFC was included in this study as it was assumed that it would be associated with role intentions. WFC was not associated with mothering intentions; but, it was negatively correlated with career intentions, suggesting that as anticipated WFC increased, career intentions decreased. Further, it seems it is specifically the anticipation of intrusiveness of family matters in work functions that was negatively associated with career intentions. As women anticipated greater interference in the career domain due to family obligations, women adjusted their career intentions but not their mothering intentions. These results suggest the biological imperative of motherhood simply trumps having a career when women are presented with potential conflict between roles.

Keeping in mind that causation cannot be proven given the methodology of the present study, it appears that when presented with the choice of roles, for women who anticipate higher WFC, the pursuit of the career role is not as likely to win out over the pursuit of the role of motherhood. Indeed, this would be consistent with Friedman and Weissbrod's (2005) and

Wiley's (1991) findings that women often ultimately value their parental roles over their career roles. One reason for the potential downgrading of career intentions, that has been associated with greater anticipated WFC as well, might be related to the relationship between anticipated WFC and attitudes: Increased anticipated WFC was associated with less positive career attitudes. Thus, it appears, that in a battle between mothering and career intentions, when conflict between roles is anticipated, career attitudes and intentions bear the brunt of the fallout of that perceived conflict. The potential reasons for this are unclear. It is possible that women continue to more strongly relate to the mothering role, considering it a potentially more important aspect of their social identity. Such a finding would be consistent with previous research that suggests motherhood is still a central aspect of women's identities (Söderberg et al., 2013) and research that suggests women continue to experience significant social pressure to become mothers (Bergart, 2000; Cassidy & Sintrovani, 2008; Letherby, 1999). Perhaps women perceive or experience more pressure to be the ones to give up careers relative to their partners. Indeed, this might be supported by the current study results examining the role of subjective norms in the TPB models: Although subjective norms did not appear to contribute to intentions for careers, it was significantly associated with mothering intentions. It is possible that women more greatly value the opinions of others with respect to mothering intentions, making them more likely to commit to that role over the career role in the face of high anticipated WFC. Potentially perplexingly, although women expressed more positive attitudes towards careers than mothering, only career intentions and WFC shared a significant—but negative—relationship. One possible reason for this finding is that, despite their own positive career attitudes, women's social pressures to engage in mothering may still be much harder to overcome, which could result in the anticipation of WFC having greater meaning for women's career decisions than for their mothering decisions.

7.4 The Basic Model of TPB

In line with past research (Arnold et al., 2006; Dommermuth et al., 2011; Giles & Larmour, 2000; Luo & Mao, 2014; Mencarini et al., 2015) as well as recent theorizing from proponents of the TPB and its potential relevance for role—particularly reproductive—decisions (Ajzen & Klobas, 2013), the majority of my hypotheses around the TPB model and young women's mothering and career intentions were supported. That is, the basic model of the TPB was further substantiated for both mothering intentions and career intentions. Moreover, the

results of both analyses of the TPB models of intentions (i.e., career and mothering) provide support for the TPB over Theory of Reasoned Action. That is, the results of the analyses of the basic TPB models are in line with Ajzen's (1985) contention that perceived control over the intended behaviour contributes to our understanding of intentions: Perceived control contributed to a small amount of variance accounted for in both mothering and career intentions.

7.4.1. Mothering intentions.

The TPB model accounted for a large proportion of the variance in mothering intentions overall (i.e., 53%). Indeed, attitudes, subjective norms, and perceived control all contributed significantly to the prediction of mothering intentions. In fact, the effect size (e.g., semipartial correlation) for attitudes accounted for 37.2% of the variance in mothering intentions, suggesting that attitudes may play a very important role in women's childbearing intentions. Subjective norms and perceived control reduced the variance in mothering intentions by 3.2% and 3.6%, respectively. Comparisons of the relative importance amongst these three constructs indicated that the semipartial correlation for mothering attitudes was significantly greater than the semipartial correlations for subjective norms and perceived control. Such a finding inherently makes sense: The degree to which women value mothering and their attitudes about mothering, as shaped by the perceived costs and benefits of those roles, are likely to strongly influence their decision to become mothers. Others have similarly found strong support for the role of attitudes for reproductive intentions (Luo & Mao, 2014).

7.4.1.1 Mothering attitudes.

Having children is associated with a broad range of costs and benefits that may motivate or demotivate women when forming mothering intentions. As has been observed by many previous researchers (Billari et al., 2009; Langdridge et al., 2005; Lawson, 2004; Yaremko & Lawson, 2007), women generally hold positive attitudes towards mothering. Langdridge et al. (2005) found that, compared to men, women did not perceive the potential costs associated with mothering to be as important or perhaps relevant to their own anticipated experiences. Similarly, Lawson (2004) found that those who wanted to become mothers expected a greater number of personal rewards associated with mothering than those who intended to be childfree. Moreover, she found that parenting intentions were not related to perceived costs, including personal responsibility, suggesting that perceived costs may not be a relevant factor in women's decisions about mothering.

Although women's attitudes about childbearing are generally positive, women who intend to be childless have expressed more negative attitudes towards childbearing than women who intend to be mothers (Langdridge et al., 2005; McQuillan et al., 2008). Comparisons between intended mothers and intended childfree individuals in the current study support these past findings: Those who intended not to have children held much less positive attitudes towards mothering compared to those who intended to have children. For those who intend to become mothers, Liefbroer (2005) found that the perceived costs of mothering on careers was associated with the intended timing of women's anticipated engagement in the motherhood role. Specifically, greater perceived costs increased the likelihood of delaying motherhood.

Although a woman may intend to engage in a particular behaviour (e.g., becoming a mother), it is possible to simultaneously hold both positive and negative attitudes about that behaviour. For that reason, others (Billari et al., 2009; Dommermuth et al., 2011; Philipov, Spéder, & Billari, 2006) have argued that it may be useful to separate negative from positive attitudes and simultaneously examine these attitudes in relation to role intentions. In the current study, however, I used an average score of the positive and negative beliefs (combining both perceived costs and rewards) to get an overall sense of attitudes. Visual examination of means for belief-based (and direct) measures of attitudes suggest that many positive and negative beliefs simultaneously co-exist for these women (see Appendix S). While it may be useful to separately analyze negative and positive attitudes, the overall measure of attitudes is more consistent with the TPB model (Klobas, 2010). Women's attitudes towards mothering (both negative and positive) accounted for a considerable amount of variance in mothering intentions (i.e., 37.2%).

Simultaneously holding positive and negative beliefs is consistent with past research noted above as well as that conducted by Söderberg et al. (2013) who found that, in their sample of students and unemployed women from metropolitan and rural areas, attitudes towards mothering could be broadly grouped according to positive future beliefs and negative current beliefs about childbearing: (a) those who viewed fertility as important in the future (e.g., children are essential, will help personal development) and (b) those who viewed fertility as a current hindrance (e.g., children would limit life currently, do not want responsibility or limits on leisure right now). Interestingly, they also found women currently pursuing education most endorsed the importance of fertility in the future and not present. In contrast, Lawson (2004) suggested that

younger adults might view costs of childrearing as less salient because the behaviour is likely to occur in the more distant future. It is unclear which direction, if any, the attitudes in the current study may be biased. That is, women in the present study were pursuing education and expecting to have children an average of more than 6 years into the future: They could hold more negative beliefs about childrearing at present than women who might be closer in time to taking actions to achieve intended fertility, which would be consistent with Söderberg et al. (2013). Alternatively, consistent with Lawson's (2004) argument, they could be less likely to be biased by, or perceive, costs given that they might not need to fully consider them until they are closer in time to being impacted by those potential costs.

7.4.1.2 Mothering subjective norms.

For many women, motherhood is considered to be an important aspect of their sense of identity (Remennick, 2000). Indeed, women may view fertility as essential to their *social* identity (e.g., fertility provides communion with other women, importance of partnership when having children; Söderberg et al., 2013). Numerous researchers (e.g., Bergart, 2000; Cassidy & Sintrovani, 2008; Letherby, 1999) have examined the role of social networks in fertility decisions. Ex and Janssen (1998) and Goodnow (1992) found mothers' attitudes predicted their daughters' attitudes towards motherhood. Similarly, Kotte and Ludwig (2011) found a strong relationship between parental fertility behaviours and the fertility patterns of their children, suggesting that there is an intergenerational transmission effect for fertility (i.e., increased number of siblings was associated with increased number of children). These authors also found that the fertility patterns of friends were associated with individuals' own fertility behaviours. In contrast, the fertility patterns of siblings do not appear to contribute strongly to individuals' fertility patterns (Kotte & Ludwig, 2011). Yet others have found more support for the role of sibling fertility patterns (e.g., Kuziemko, 2006; Lyngstand & Prskawetz, 2010).

Subjective norms, within a TPB framework, have been found to be important to both first child intentions for nulliparous individuals and subsequent childbearing intentions for those who are already parents (Dommermuth et al., 2011). With respect to social pressures and influence, the results of the current study are surprising in that subjective norms—while still statistically significant in the basic TPB model—only accounted for a small amount of variance (i.e., 3.2%) in mothering intentions. The relatively weak relationship between mothering intentions and subjective norms may suggest that women might not place much value on the opinions of

potential important others in their lives when it comes to their intended fertility. Alternatively, it is possible that the influence of subjective norms may be less strong for women's decisions to have or not have children (as was the focus of the analyses in the current study) and are stronger with respect to the fertility patterns of intended mothers (e.g., number of children, age of first birth) as other researchers have found (e.g., Booth & Kee, 2009; Dommermuth et al., 2011; Murphy & Wang, 2001).

Examining subjective norms further, I assessed the correlations between each role intention and each subjective norm referent, and I then statistically compared the partial correlations to determine the relative importance of the referents. Contrary to my expectations and to past research (e.g., Ex & Janssen, 1998; Goodnow, 1992), for mothering intentions young women's mothers were not considered more important than most other subjective norm referents. Indeed, mothers, fathers, and the general category of "most people" were not statistically different, although all were considered more relevant to these young women's mothering intentions than other family, friends, and society in general. It is challenging to compare these results to previous research given that categories such as "most people" and "society" have—to the best of the my knowledge—not been included in previous research. Indeed, many studies examining possible social influences on fertility patterns have been conducted with extremely large samples and their approaches to measuring social influences are quite unlike the present study. For example, Bühler and Fratczak (2007) arbitrarily chose to define the individuals with whom the participants met at least once a month as "peers," whereas—in the current study—respondents were free to make their own determination about who constitutes their peer group and the extent to which they value the opinions of the peer group. Nevertheless, despite the different approaches to examining social influences, the overall findings of the present research provide support for the role of social referents in general when it comes to mothering intentions.

7.4.1.3 Mothering perceived control.

Women's reproductive intentions and their ability to achieve those intentions to have children can be impacted by a number of factors that may or may not be within their control, including fertility, availability of a spouse/partner, finances, career engagement or demands, and supports for childcare. Raymo, Mencarini, Iwasawa, and Moriizumi (2010) examined the influence of the availability of parents (and in-laws) for childrearing support on women's fertility

intentions, finding a positive relationship between these factors for most women. Nevertheless, in situations where women perceived fertility to be associated with a high opportunity costs (e.g., where women held negative attitudes about childrearing), the availability of potential childcare supports had no influence on childrearing decisions. Similarly, although all TPB constructs predicted mothering intentions, Billari et al. (2009) found that perceived control was only relevant to intentions when individuals' intentions were to have a second child as opposed to intentions to have a first child.

Dommermuth et al. (2015) argue that nulliparous women underestimate the difficulty of acting on their intentions, ultimately then limiting their ability to attain their intended fertility. Rather, people who are already parents are better able to consider their ability to have and manage another child. The inability to realistically estimate the likely challenges and constraints that contribute to difficulties attaining intended fertility suggests young childless women may overestimate their control (i.e., have overly positive perceived control beliefs). Billari et al. (2009) also found no support for perceived control for nulliparous women, noting that for these women only attitudes and subjective norms were relevant, while perceived control was relevant to individuals who wanted to have a second child. Billari et al.'s (2009) and Dommermuth et al.'s (2015) findings suggest it is possible that women who are not yet mothers do not just underestimate difficulties but they may also not be aware of possible barriers. That is, when forming intentions to pursue motherhood, women may not be aware of—or be concerned about—their control over their ability to achieve the intended behaviour (i.e., motherhood).

As noted above, the results of the TPB mothering model in the present research indicate that perceived control reduced the variance in mothering intentions to a significant, but quite small, degree. The rather weak association between perceived control and mothering intentions suggests that perceived control has a very small impact on women's mothering intentions. That is, as noted above, there are likely many women who do not perceive themselves to have any significant concerns with respect to factors that could influence their ability to achieve their intentions. Possibly, however, many women might perceive themselves to have low control but still express intentions to become mothers. Indeed, the weak association between perceived control and intentions, may suggest that some women might intend to act in a way that is inconsistent with their perception of control over that situation. It is conceivable that women perceive barriers, but do not feel that such barriers will actually apply to their own situation,

suggesting a super(wo)man effect not unlike that observed in substance use literature (e.g., see Joe, 1995): Women may perceive themselves as having greater control and see others as having less control, considering themselves as possibly invincible to the hazards that could impact others. The TPB is based on the individual's *personal beliefs* (e.g., the extent to which one believes a potential barrier applies to them and the extent to which one believes it could impact their ability to achieve the desired behaviour). Women's beliefs about how such factors could hypothetically apply to others was not measured, making it impossible to ascertain whether women in this study believe such factors are more relevant to other women and not very relevant to themselves or whether women think such factors are simply not very relevant. It is conceivable that intentions, despite perceptions of control, could also be a reflection of the superwoman effect: Both roles are valued and both are intended, no matter how many barriers may or may not be in the way. Regardless of whether they see themselves as superwomen, women perceive potential barriers as having minimal impact on their chosen roles.

7.4.2. Career intentions.

Few researchers have attempted to examine career engagement from a TPB perspective. Further, many researchers have chosen to examine various aspects of career intentions rather than focusing more broadly on whether or not individuals intend to engage in a career. Although there are a number of studies (e.g., Arnold et al., 2006; Giles & Larmour, 2000; Giles & Rea, 1999; Huang, 2011; Van Hooft & De Jong, 2009) that have applied the TPB to aspects of careers, with populations of individuals who have already expressed intentions to pursue careers or are currently engaged in their careers, there is a dearth of research that has explicitly examined the TPB as it applies simply to intentions to engage or not in having a career. Moreover, the focus of such research has generally not been on women's career intentions.

Career engagement is not universal for women: Given that some women choose not to have careers, it is important to understand the beliefs that shape their decisions. Thus, the focus of this research was not on specific aspects of women's career engagement but on whether women intended to engage in careers or not. Additionally, even though others (e.g., Arnold et al., 2006; Giles & Larmour, 2000) used the TPB to examine various aspects of career engagement, these researchers and others have not approached the study of careers using TPB by measuring the constructs through indirect, belief-based, items (i.e., with specific beliefs derived from an elicitation study); rather, previous researchers have chosen to measure TPB beliefs through direct

items (e.g., attitudes were measured with semantic differential items, such as *good-bad* or *enjoyable-unenjoyable*). To the best of my knowledge, the current research is the first to examine women's intentions to pursue (or not) a career from a TPB perspective and to use belief-based items for careers that were derived from an elicitation study procedure.

In contrast to the TPB model for mothering intentions, in the present research, the basic TPB model for career intentions—while still significant—only reduced the variance in career intentions by a very small amount (i.e., 7%) when taking into account career attitudes, subjective norms, and perceived control. Further, although all three TPB factors contributed to the prediction of mothering intentions, only attitudes and perceived control contributed to the prediction of career intentions. However, attitudes and perceived control were only weakly associated with career intentions, reducing the variance in career intentions by just 2.9% and 3.2%, respectively. Thus, the current research provides partial support for the TPB and also provides support for the TPB over the theory of reasoned action, given the relationship between career intentions and career perceived control.

7.4.2.1 Career attitudes.

Arnold et al. (2006) found that attitudes were a significant predictor of intentions to work in various health professions. Giles and Larmour (2000) found that women's attitudes were positively associated with intentions to apply for a promotion. In the current study, although attitudes appeared to be quite important for mothering intentions, the association between career intentions and career attitudes appeared to be weaker. The weak association between career intentions and attitudes is less consistent with other researchers' findings (e.g., Crompton & Lyonette, 2005). Specifically, Crompton and Lyonette found that women who were more educated held more positive career attitudes that were strongly associated with their career intentions.

There are a few potential reasons for the observations in the current study. For example, it is possible that the relationship between career intentions and other factors was muted by the fact that there was limited variation in career intentions (i.e., nearly all of the young women pursuing higher education expressed a high degree of intention to pursue careers). With ever growing emphasis on personal development and the pursuit of careers (Balen, 2005; Gillespie, 2003; Kerpelman & Schvanveldt, 1999), as the age of first childbirth increases (Ferrao, 2010) and as the necessity of dual-income families increases (Uppal, 2016), fewer women may feel that

they have the option of not pursuing a career or paid work—potentially regardless of their attitudes towards paid work. Nevertheless, there was some variability in the strength of career intentions, even within this group of young women who were pursuing higher education, suggesting that it is important to examine women's career intentions broadly rather than simply assuming all women in university have career intentions and focusing only on nuanced aspects of intended career behaviours.

In the present study, women's career attitudes, which were also largely positive with minimal variation, did not predictably vary with intentions to a large degree. It is possible the lack of a large effect in current sample may be an artifact of the sample itself: Young women in this sample may already be more committed to having a career—and hold more positive attitudes—because they are pursuing post-secondary education, than their counterparts who choose not to pursue post-secondary education. Alternatively, women's attitudes towards having careers may have little bearing on their intentions to pursue careers because they plan to or feel obligated to seek out the career role, regardless of their attitudes. While it is possible more positive career attitudes result in young women deciding to pursue education or a career, it is also possible that, having chosen to pursue a career, these young women's career attitudes may become more positive to align with their choices, minimizing dissonance. Women's career intentions may also be constrained, despite their attitudes, by external factors (e.g., economic considerations; see Crompton & Lyonette, 2005; Duncan & Irwin, 2004; McRae, 2003). Further supporting the relative invariability of career attitudes, although the career attitudes of intended mothers and intended childfree individuals significantly differed, both groups of women had largely positive career attitudes, and the effect size for this finding was small. Regardless of why, career intentions and career attitudes were weakly related, suggesting that they are fairly independent of each other and that women are pursuing careers regardless of whether or not they hold less or more favourable attitudes towards careers.

7.4.2.2 Career subjective norms.

Perhaps surprisingly, subjective norms did not contribute significantly to the model of career intentions. Although Inda, Rodríguez, and Peña (2013) found women perceive themselves as having social support from friends and family more so than men with respect to their choice of career field, young women in this study did not appear to be influenced by their social referents. The results indicated there was no apparent relationship between women's career intentions and

their beliefs about what potential important others expect of them and the value of those people's or group's expectations. That is, regardless of the perceived desires of their social referents, most women had quite high intentions to pursue a career. These findings may be consistent with societal standards changing to emphasize individuals' increased personal development, which may override other social pressures. That is, women may feel less concerned about what their social referents think about specific intended behaviours (e.g., pursuing careers) and more about living in a manner aligned with the current zeitgeist of general personal development.

Previous researchers have suggested that some social referents are more important in young women's role development. Specifically, mothers are important role models for daughters' own career (and family) decisions (Chevalier, Harmon, O'Sullivan, & Walker, 2013; Greene, Han, & Marlow, 2011; Michelson & Velasco, 1998)—although others have found that fathers also contribute more to women's career pursuits in male-dominated fields (Hellerstein & Sandler Morrill, 2011). However, contrary to my expectations and to past research, comparisons of individual subjective referents suggested that there were no differences across any of the subjective referents in terms of their contribution to career intentions. That is, young women's mothers were not considered more important than most other subjective norm referents in shaping career intentions. Indeed, the zero-order correlation for fathers appeared to suggest that fathers may be more relevant to women's career decisions; however, the partial correlation for fathers, holding all other subjective norm referents constant, was not significant. The finding that there was no effect for any individual referent was not entirely unexpected given that subjective norms as a whole did not contribute to career intentions. Potentially in line with the current null findings for subjective norms overall and individually, Crompton and Lyonette (2005) found that having a mother who worked (which could, arguably, increase the likelihood that mothers are a potentially influential subjective referent) did not directly predict work behaviour. Rather, Crompton and Lyonette discovered that women's education (i.e., a perceived control factor in the present research) was a better predictor of employment attitudes and employment behaviours.

7.4.2.3 Career perceived control.

Similar to career attitudes, the independent effect for perceived control and career intentions was positive but weak, accounting for just 3.2% of the variance in career intentions. Additionally, as was the case for career attitudes, women's career perceived control was fairly positive. One possible shortcoming of this construct that may have affected the results is that it

was composed of just two factors: education and social support. Unfortunately, contrary to my expectations, based on the elicitation study and reliability analyses the final measure of career perceived control for the main study did not include any mothering specific or family factors in general. That is, only "having children" and no other family concerns were identified in the elicitation study. Ultimately, in order to have acceptable reliability for the perceived control construct, this item was dropped because the vast majority of women wanted children and felt that having children would make it more challenging for them to have a career, regardless of their other perceived control beliefs (i.e., the items did not vary together). Thus, only education and social support provided good reliability together and were retained for the career perceived control construct, potentially weakening the validity of career perceived control.

The current study results suggest careers may be facilitated to some degree by the extent to which women feel able to obtain an education and have social supports. However, it is possible that some relevant perceived control factors were not accounted for in this study, which may lead to an underestimation of the role of perceived control in career intentions. For example, others have found child-related career perceived control beliefs—which was unavoidably dropped in this study—are important to aspects of career decisions (Inda et al., 2013). Nevertheless, there may be a gendered effect for the perceived impact of family on careers: Inda et al. also found men were more likely to perceive family barriers to their careers compared to women. Men and women's perceptions, however, are not consistent with research that indicates women are more often penalized in their careers than men and men more often experience a benefit to their careers because of their parental status (Cuddy, Fiske, & Glick, 2004).

7.5 The Expanded Models of TPB

Given the significant potential conflict between mothering and career roles, and in light of my arguments about the need to more comprehensively consider how other life roles may influence other life role intentions and related constructs, I tested an expanded TPB model that includes the potential influence of other role beliefs. To that end, I examined the potential contributions of career attitudes and subjective norms to mothering intentions over and above mothering attitudes, subjective norms, and perceived control. I used the same approach to test an expanded TPB model of career intentions. Full expanded models of the TPB were not tested, however, as only those constructs that demonstrated a significant relationship with the intentions of interest were included in the respective models.

7.5.1 Mothering intentions

An expanded model predicting mothering intentions, including mothering attitudes, subjective norms, and perceived control and career attitudes and subjective norms was tested with hierarchical regression (i.e., career perceived control did not share a significant direct relationship with mothering intentions and, consequently, was omitted). Although the model with the addition of career attitudes and career subjective norms was significant even after accounting for the mothering beliefs constructs, the addition of these career constructs only reduced the variance in mothering intentions quite minimally. Moreover, only career attitudes, and not career subjective norms, contributed significantly to the model. The negative semipartial correlation indicated that career attitudes accounted for an additional 1.7% of the variance in mothering intentions.

The directionality of the relationship between career attitudes and mothering intentions was in line with my expectations: The less positive their attitudes about careers, the greater women's intentions to become mothers. Not surprisingly, and consistent with the WFC literature, women's attitudes about careers suggest that careers are perceived as negative in relation to, and potentially conflicting with, the mothering role. In contrast, the lack of relationships between mothering intentions and career subjective norms and career perceived control were unexpected. Career subjective norms initially appeared to share a relationship with mothering intentions; however, after accounting for the variance in mothering intentions that was associated with mothering beliefs, including mothering subjective norms, no further unique variance in mothering intentions remained for career subjective norms. Although the same individuals and groups were measured for mothering and career subjective norms, only beliefs about what others think about the mothering role and the extent to which women valued other's opinions about the mothering role contribute to mothering intentions. What others think about women's career roles appears to have no relationship to those women's mothering intentions, which is surprising given that some women in the elicitation study explicitly noted that important others expressed concerns about women pursuing careers *because* of the perceived impact it could have on women's ability to engage in the mothering role.

Similarly, for career perceived control there was no relationship with mothering intentions. In contrast to what I had anticipated, very few nuanced beliefs about careers and the intersection with mothering were noted in the elicitation study. It is possible that the beliefs

about careers measured in this study do not adequately capture those relevant to mothering intentions. Alternatively, however, it is possible that women compartmentalize beliefs about these roles, or engage in cognitive dissonance, to reduce the impact of any discrepancies between their beliefs about differing and potentially opposing roles; and, this could decrease the likelihood that their career beliefs contribute to intentions in the mothering domain. Ultimately, despite the slight negative relationship between career attitudes and mothering intentions, the vast majority of women intended to pursue the mothering role, which suggests that neither positive nor negative beliefs about careers matter for most women when it comes to fulfilling their motherhood mandate.

7.5.2 Career intentions

An expanded model predicting career intentions, including the TPB beliefs of career attitudes, subjective norms, and perceived control and only mothering subjective norms was tested (i.e., mothering attitudes and perceived control did not share a significant direct relationship with career intentions and were omitted). The model with the addition of mothering subjective norms was significant, and the addition of this mothering construct boosted the percent of variance accounted for from 7% to 10%. That is, over and above the basic TPB model, mothering subjective norms accounted for 2.9% of unique variance in career intentions.

Although women expressed beliefs that careers were beneficial to mothering in the elicitation study and although regression analyses indicated career attitudes were negatively and weakly associated with the mothering role, mothering attitudes were considered neutral with respect to career intentions, having no detectable impact on women's intentions to pursue careers. The lack of relationship between mothering attitudes and career intentions is somewhat surprising given that young women in the elicitation study reported some negative beliefs about the impact of mothering on the career role and given that the negative impact on careers was an item included in the mothering attitudes construct. Similarly, the lack of relationship between mothering perceived control and career intentions was also unexpected given that women also identified mothering perceived control beliefs that touched upon careers, including the impact of mothering on careers, financial stability, achieving other life goals (e.g., careers), and having no other time commitments (including careers).

Potentially even less clear is that, while career subjective norms were not significant contributors to the model, mothering subjective norms were. That is, women who held positive

beliefs about the opinions of their subjective norms and how they value those opinions for the mothering role appeared to also have greater intentions to pursue careers. Interestingly, regardless of what their social referents think about having a career, nearly all women want to engage in future careers. Reconciling the relationship between mothering subjective norms and career intentions and the lack of a relationship between career subjective norms and career intentions may be challenging and require a consideration of potential complex relationships between various factors. Perhaps women who feel supported by, and value the opinions of, their social referents with intentions to become a mother also feel more inclined to pursue careers because they feel the same people would support a career—particularly if having a career then better provides those women with the ability or means to engage in the mothering role (e.g., financial stability and means to support children).

7.6 Contribution of Background Factors Over TPB Model

The TPB suggests all relevant variables contributing to role intentions are accounted for by the TPB construct of attitudes. However, it is possible that not all personal characteristics are captured by TPB beliefs. For example, Mencarini et al. (2015) found that all three of the constructs in the TPB model contributed to mothering intentions; however, additional background factors were not fully mediated by the TPB constructs of attitudes, subjective norms, and perceived control. Rather, the authors found that various other factors (e.g., women's employment, degree of religiosity, women's age, current division of housework, duration of the couple's relationship) directly influenced fertility intentions as well as women's fertility behaviours. In light of these findings, in the present study, I re-examined both of the basic TPB models while also including factors, such as role salience, gender-role traits, and WFC.

Similar to Mencarini et al.'s (2015) findings, the results of the analyses in the current study indicated that the TPB did not entirely account for all relevant variables contributing to intentions. For example, mothering intentions and mothering salience shared a relationship even after accounting for the TPB constructs. That is, mothering salience predicted mothering intentions over and above the mothering TPB constructs. Although others have not tested this aspect of the TPB for career intentions, a similar finding to that of the mothering intentions analyses was observed: Background factors, such as career salience and WFC, predicted career intentions over and above the career TPB constructs. These findings for both the mothering and career intentions models including background factors suggest that—although the TPB can be a useful parsimonious theoretical model for

understanding role intentions—there may be room for improvement in the TPB model. Ultimately, these findings suggest that potentially important factors may be omitted when relying only upon the basic TPB model constructs to inform intentions. The results of this study indicate that the TPB is a useful theoretical model, particularly for understanding mothering intentions; nevertheless, future research using this model to better understand mothering and career intentions should also include additional background factors, such as role salience and anticipated WFC.

7.7. Implications

Women form intentions about mothering and careers throughout their young lives (Marks & Houston, 2002; Khoo & Ainley, 2005), and they are actively making decisions in their early in their adult lives that can have important implications for their ability to ultimately engage in these roles. That is, the behaviours that they engage in during these years may inhibit their ability to achieve their desired roles or to fully realize their intentions. Heiland, Prskawetz, and Sanderson (2008) found that highly educated people intend to have more children than their less educated peers. Unfortunately—although educated and less educated women alike both tend to not fully achieve their fertility intentions (Liefbroer, 2009; Porter et al., 2006; Testa, 2012)—by focusing on education and careers during their most fertile years and having greater intentions to delay entry into motherhood, the gap between intended and achieved fertility tends to be larger for more educated women (Testa, 2012). For the young women in this study, greater career intentions, potentially requiring more education, were indeed associated with greater intentions to delay childbearing. Similarly, by engaging in mothering, often earlier in their careers, other women are less likely to obtain advanced positions or may experience wage penalties (Avellar & Smock, 2003; Gangl & Ziefle, 2009; King, 2008). The current results are also consistent with this finding: Those who expressed greater mothering intentions also expressed greater intentions to have children at younger ages, which could impact their educational and career engagement.

Despite the apparent conflict between career and mothering roles, women do not seem to adjust their intentions early in life to account for role conflict. For example, relative to less educated women, those who invest more in their educations still do not plan to have fewer children (Testa, 2014). However, it should be noted that in the present study there was a very weak negative relationship between number of children and career intentions, suggesting that career-oriented women may ever-so-slightly adjust their desired family sizes downward.

Although the current study provides support for the basic models of the TPB, there was

also partial support for the expanded models of TPB that took into account beliefs related to potentially opposing roles. Additionally, in the present study, there was some support for the importance of considering anticipated WFC in women's role intentions, which is relevant given that experienced WFC has been associated with a host of negative psychological outcomes for individuals (Kinnunen & Mauno, 2008; Lee et al., 2014; Lu et al., 2005). Taken together, the results of this research and previous literature on these conflicting roles suggest it is important to simultaneously consider both roles, their associated beliefs, and how those beliefs may contribute to women's role intentions. Further, in light of the findings in the present research, the growing number of women who engage in both mothering and career roles, and the conflict between these roles that may prevent fully being able to achieve intentions, it is essential to consider how to better support women in achieving their intended roles through social and work policies.

The TPB can provide direction when it comes to determining what beliefs may be important to target. For mothering, attitudes appear to be most relevant to women's intentions, but subjective norms and perceived control are also important considerations. Attitudes might be further shaped by interventions aimed at increasing women's awareness of the costs and benefits of mothering, and by working—through social policies or programming—to decrease the costs (e.g., financial costs, career impact, relationship changes) and increase the benefits of mothering. Although the effect for subjective norms was weaker than attitudes for mothering intentions, interventions aimed at subjective norms may also be helpful. Social normative changes tend to be longer-term ideational ones (Billari et al., 2009) but can be increased through exposure to positive social interactions with individuals who express these ideals. Similarly, even though the results for perceived control and mothering intentions were weak, efforts to improve perceived (and actual) control for mothering are important.

The finding that women with high mothering intentions and salience expressed intentions to use and *rely* on fertility treatments, especially in light of research that indicates women have poor awareness of fertility (Daniluk et al., 2012), also suggests that it may be useful to determine whether or not interventions aimed at increasing awareness of potential barriers—like age, fertility, and efficacy of artificial human reproductive technologies—may be useful. For career intentions, it appears that interventions should be primarily targeted at career attitudes and perceived control, as career subjective norms did not have an impact on career intentions. Similar to mothering interventions, to promote greater career intentions, career attitudes might be further

shaped by interventions aimed at increasing the benefits and decreasing the costs (e.g., stress, relationship changes, time demands) of having careers and career perceived control could be further enhanced through aids that further help women access and complete education.

There are several avenues through which attitudes may be shaped and through which awareness of fertility as well as role conflict could be promoted. For example, given that some researchers have found that people are starting to form future role intentions in adolescence (Marks & Houston, 2002) and Savela and O'Brien (2016) found very young adults (M = 19.6 years old) start to adjust aspects of their career intentions with potential role conflict in mind, exposure to relevant information within the grade school education system may be one such way to increase awareness early and help young people start to plan for and problem solve around potential role conflict. This may be particularly important in light of the fact that the current study focused on emerging adults, and—similar to what other researchers have reported (Conceicão, Pedro, & Martins, 2017; Daniluk et al., 2012)—they seemed to be relatively unknowledgeable with respect to fertility and role conflict. For instance, for this sample of young adults, (a) the average anticipated work-family conflict level was relatively low, (b) most expressed fertility intentions (e.g., number and timing of childbearing) inconsistent with current trends observed both in Canada and across various Western countries, and (c) there was a high level of expressed intentions to use ART while overestimating the success of such techniques, potentially suggesting some overestimation of their likely control over their fertility.

Additionally, parents can be important resources and sources of information and they should be encouraged to talk with their children not only about sexual health and pregnancy prevention but also fertility. Of course, this necessitates educating parents first, as many current adults lack fundamental knowledge about fertility and the fallibility of reproductive technologies (Conceicão et al., 2017; Daniluk et al., 2012). Finally, there is room to improve upon the knowledge and psychoeducational practices of physical and mental health professionals with respect to communicating with clients. Physicians, specialists in reproductive medicine, psychologists, career counsellors, and other professionals in mental or reproductive health should be encouraged to ask questions about and discuss clients' future fertility and career *desires*—and such discussions could start in early adolescence even before intentions might be more fully formed. Although the current study is limited to the fertility and career beliefs and intended patterns of women, ideally these interventions would be made available to both genders from an

early age. Given that fertility decisions and plans around the balance of duties are often made in the context of romantic partnerships and that partners can influence fertility decision making (Bauer & Kneip, 2014), it is important for both partners to have accurate information upon which they can make informed decisions.

It is important to decrease the perceived conflict between roles, as women's educational and career engagement continue to grow, by trying to find societal and workplace options that allow women to view engagement in multiple other roles as enhancing and not detracting from their other roles. For example, some have suggested that in order to attract and retain women, employers need to restructure their organizations and create policies that allow greater flexibility (e.g., greater personal control over working hours) for women to meet their work responsibilities and their home responsibilities (Cabrera, 2009; Enache, Sallan, Simo, & Fernandez, 2011). However, similar flexibility and access to family-friendly benefits for men may be beneficial to consider in order to promote greater engagement of male employees in family roles and decrease the burden of caregiving typically borne by women. Additionally, it is important to consider creating policies to eliminate biases and stereotypes in hiring, wage increases, and promotion procedures to reduce the potential for the motherhood penalty on wages and advancement.

In countries where there are family supportive policies and affordable childcare, the rate of childbearing is close to the rate of replacement for the population (Caplescu, 2014). Thus, governments may also have a role in reducing conflict between roles. Through country-wide laws and services, governments can promote increased family-size achievement while also promoting workforce engagement. Some potential policies that support parents in their multiple role pursuits include increasing access to well-paid parental leave and affordable and safe childcare as well as access to fertility treatment as part of women's health benefit plans. Educational institutions may also benefit from adjusting to support women's dual-role pursuits. As Kuperberg (2009) describes, women pursuing educations—especially those pursuing advanced (graduate) studies—often believe that education and motherhood are incompatible and motherhood is discouraged within their departments. Educational institutions could better promote women's ability to engage in educational pursuits and the mothering role through encouraging more discourse about fertility and having open discussions about various options available to support motherhood throughout women's educational pursuits. Educational institutions could also work to increase the availability of childcare on campuses and establish

funding models that allow women better access to paid parental leave during studies.

Nevertheless, social policies cannot underwrite all of the possible costs of dual roles, such as a potential reduction in prospects for social relationships, mental stimulation and challenge, or employment skill development or training (Adda, Dustmann, & Stevens, 2016; Perry-Jenkins, Repetti, Crouter, 2000) or the potential of missing childhood milestones, the loss of potential time spent bonding with offspring, and less energy to provide care to and support children's healthy development due to work commitments. Although gender-role attitudes appear to be shifting to more nontraditional androgynous expression for both men and women (Judge & Livingston, 2008) and more people endorse egalitarian beliefs in theory (Cotter et al., 2011), the unequal gendered division of labour between couples continues for many (Kemkes-Grottenhaler, 2003), often resulting in greater burden on women for family responsibilities. Given the above, these belief systems may also represent a target for intervention. In line with Miller's (1994) argument that intentions are formed out of traits and desires, early engagement with girls and young women as well as boys and young men is important in order to promote greater non-gendered beliefs and intended behaviours prior to a time when these individuals solidify their role intentions.

7.8 Limitations and Future Directions

Some (e.g., Morgan & Bachrach, 2011) argue the TPB applies to conscious decisions about behaviours. The TPB has been criticized for being a theory that is focused on rational decision-making. However, as Fishbein and Ajzen (2010) point out, the TPB does not purport to pertain only to rational decisions. Rather, they argue that people can have any number of irrational or ill-informed beliefs that can contribute to their intentions, which themselves can be irrational. An additional critique of the TPB is that behaviours for individuals with high levels of ambivalence cannot accurately be captured by a theory—such as the TPB—that presumes that intentions motivate behaviours. Some researchers have suggested that more than half of pregnancies are unintended (51%; Finer & Zolna, 2014) while others have found that more than half of pregnancies are intended (60%; Sedgh, Singh, & Hussain, 2014). The number of intended versus unintended pregnancies may vary depending on how intentions are defined and the population measured (e.g., United States versus worldwide). For example, Kost and Darroch Forrest (1995) reported that 57% of pregnancies were intended and an additional 36% were intended but "mistimed." Critics have argued that studying factors that influence fertility

intentions neglects the high number of unintended pregnancies. Indeed, such reproductive patterns highlight that intentions are not always necessarily aligned with behaviours. For fertility, researchers have consistently found differences in intended fertility and achieved fertility (Régnier-Loilier & Vignoli, 2011), which arguably suggests focusing on intentions may have less utility than focusing on realized fertility. To address such concerns a longitudinal research design would be ideal, permitting the examination of intentions and achieved behaviour over time. However, such research in a population of nulliparous women pursuing education, in a country where the age at first birth is continually increasing, is not likely to be feasible. And, the discrepancy between intentions and achieved behaviour suggests the need to further understand the reasons why the discrepancy exists. Thus, while the current study methodology does not enable me to measure the potential discrepancies between young women's intentions and achieved behaviours, the focus of this study and its results speak to the potential influence of competing life-role interests and belief systems that may eventually contribute to failed realization of intentions.

The time between the measurement of intentions and the actual engagement in the intended behaviours is also, arguably, important to consider, as greater time between measured intentions and actual behaviour has been associated with less accuracy in predicting behaviour; that is, women have been found to be less able to succeed in achieving intended childbearing when intentions are longer-term (Dommermuth et al., 2015). Moreover, as time progresses, individuals may be exposed to new situations that challenge and change their beliefs and their intentions over time. Others have also argued relevant beliefs may change over time (Montgomery & Casterline, 1996; Morgan & Bachrach, 2011); and, Morgan and Bachrach (2011) argue the TPB is ill-equipped to capture these changes. However, the TPB also can capture changes in beliefs related to costs and rewards of intended behaviours when measured over time as well. Indeed, Barber (2011) argues that to model changes in beliefs and intentions with the TPB, the measure of intentions must be updated, and the theory itself will continue to predict behaviour from intentions and intentions from current beliefs. Like any model, the TPB is not immune to the possibility of changing beliefs. Ideally, to capture this variability, future studies would measure beliefs at various intervals over time and approach analyses from a multi-level modelling perspective. In such a study, the TPB would be expected to apply equally well at those various points of measurement, with beliefs predicting intentions.

Despite concerns about timing of intended behaviours, the timing of the measurement of beliefs, and the influence of time producing changes in intentions, others have also argued that fertility *intentions* tend to be fairly stable for women (Morgan & Rackin, 2010)—even though people's ability to realize those intentions may ultimately be compromised. Nevertheless, participant ages and the amount of time between measuring intentions in the present study and participants' intended age of engagement in mothering and/or career roles may be additional limitations of the present research. However, it is important to note that these women in university are already on a trajectory towards their intended careers and this critique may be more applicable to mothering intentions because these (mostly) career-oriented women may be further in time from being able to act upon their mothering intentions. Nonetheless, I opted not to impose a specific timeframe on engagement in mothering or in a career in the current study given that the current research focus was on intentions—at whatever timeframe the behaviour was intended—and on understanding the intersection of intended roles and the potential impact of those potential other-role beliefs. Not focusing on a limited timeframe was instrumental to the current research goals in light of the fact that young women are making decisions (e.g., about education, careers), potentially many years in advance of their possible engagement in the mothering role, that could impact their ability to realize their fertility intentions. Given that many of the women in the present research were young (with a median age in the early 20s)—which is younger than (e.g., 25-34 years) when many more women tend to start bearing children in Canada (Milan, 2011)—it makes sense not to impose a short-term (e.g., 2 year) predetermined and arbitrarily selected timeframe for acting on mothering intentions as this would likely result in very few women endorsing intentions to become mothers. Rather, I asked women to consider a time when they personally would feel ready to become a mother and I separately asked women to identify the anticipated timing of their mothering behaviour (which was, on average, anticipated to be in more than six years). Lastly, Dommermuth et al. (2011) found that attitudes were not important in determining the *timing* of intended fertility behaviours for adults; Instead, the authors argued that attitudes were relevant only to decisions to become or not become parents. Thus, it appears that there is support for simply aiming to understand the intention to engage or not engage in a behaviour, absent any time restrictions.

With respect to the measurement of intentions and the TPB, as Miller (1994; Miller & Pasta, 1994) argue in their traits-desires-intentions-behaviour theory, there is a difference

between desires and intentions, such that desires represent what individuals *want* and intentions represent specific targets that individuals *aim to achieve*. For example, a woman may desire four children, but for various reasons she only intends to have two and, ultimately, she may only have one child. Measuring desires would provide further richness in understanding how women's fertility and career desires may be much grander than their potentially downward-adjusted intentions. Klobas (2011) argues, however, that the TPB accounts for desires and traits in that these are background factors that shape their attitudinal, subjective norm, and perceived control beliefs. Nevertheless, given that the current study results support the contention that not all potentially relevant background factors are accounted for by the TPB, future research should include a measure of desires related to the behaviour of interest and test this assumption of the TPB model.

Another possible short-coming of the current research is the focus on intended fertility when some individuals may not yet have fully formed their intentions (i.e., some individuals may be uncertain). Possibly, the level of uncertainty is captured in women's scale ratings about intentions in the current study, which consisted of two scale items measuring likelihood of engagement and degree of agreement with a statement pertaining to having "plans" to engage in the behaviours. However, it may be useful to explicitly measure and, potentially control for, women's (un)certainty about their intended behaviours given that Bhrolcháin and Beaujouan (2011) found uncertainty was important with respect to understanding fertility decisions.

Although there are benefits to studying young women's beliefs that are specific to the particular objectives in the current results (i.e., early decision-making about multiple potentially conflicting roles that may set potential life trajectories), the young age of participants may also have drawbacks. For example, the generally younger age of women makes it potentially more likely that some factors may not have been identified in the elicitation study given the experiences (or lack thereof) and life stage of these young women. Young university women may not be in a position where they are aware of, or need to yet carefully consider, various nuanced aspects of potential employment that could impact—positively or negatively—their engagement in their family roles (e.g., childcare, flexible work hours) and vice versa; however, those same factors might become more prominent for women as they age and find themselves considering their employment and childbearing options. Thus, some beliefs may ultimately matter to women when they are closer to acting on their intended behaviours.

As noted in the elicitation study, young women identified a number of factors they felt may contribute to their decisions to become mothers (or not) and their decisions to pursue careers (or not). However, a number of factors previously identified in the literature were not identified by the young women in the elicitation study. For example, these young women did not identify spouses/partners as potential social referents, despite more than half of them being in relationship at the time of the elicitation study. Similarly, the young women in the elicitation sample did not identify childcare or parental leave availability as potential barriers whereas these factors have found to be important aspects of perceived control by other researchers (e.g., Dommermuth et al., 2011). As noted above, potential reasons for the limited identification of these factors may be related to age and (in)experience. That is, the young women in the sample may not (yet) be aware of the potential influence of these factors. Alternatively, if they were aware of these factors, they may not believe that these unreported factors were relevant to them at present, which might be consistent with Lawson's (2004) argument that parenting costs may not be relevant to women at this life stage. Thus, it is possible that some of the potential concerns previous identified in the literature only become more important with age or—personal or vicarious—exposure (e.g., when encountered by those within their social network).

Given that the TPB models did not entirely account for all relevant background factors, there may be reason to suspect the ability of the TPB to simplify such potentially complex intentions and behaviours into just three constructs or, alternatively, to suspect the measurement of the theory's constructs. That is, the fact that background factors were not fully mediated through TPB constructs in the present study—and in Mencarini et al.'s (2015) study—could suggest that the theory itself may not be able to simplify complex processes into just three constructs that capture all relevant factors that influence intentions. Alternatively, it is possible that the questions included in this study did not fully reflect the three constructs proposed by the TPB. However, unlike many previous examinations of the TPB in relation to fertility (e.g., Dommermuth et al., 2011, 2014; Mencarini et al., 2015) and careers (e.g., Arnold et al., 2006; Giles & Larmour, 2000; Giles & Rea, 1999; Huang, 2011; Van Hooft & De Jong, 2009; Vincent et al., 1998), in the current study I adhered to the elicitation procedure proposed by Ajzen (2006) in attempt to increase the probability of capturing *only* the beliefs that are likely to be, at this time in their lives, pertinent to role intentions for the population of interest (i.e., young nulliparous women in university).

Nonetheless, the process by which the elicitation study was completed could be adapted in future research. Specifically, I completed a single elicitation study, asking women to report beliefs about mothering and report their beliefs about careers. An alternative method that might produce a different number or set of beliefs would be to complete three separate elicitation studies: one eliciting mothering beliefs, one eliciting career beliefs, and one eliciting beliefs about being mothers *and* being career women. This proposed method may result in a greater number of nuanced beliefs about each role and the intersection of these two roles, which may still be implicitly—if not explicitly as the current elicitation study suggests—relevant to women's role intentions.

Future research examining mothering and career intentions may benefit from using the elicitation procedure as recommended by Ajzen (2006) as well as from including factors that are identified through thorough literature review. The inclusion of items from both procedures might make for a more cumbersome questionnaire given the sheer number of items that this could entail. However, the inclusion of variables derived from both methodologies might make it more possible to increase confidence in concluding that the results either validate or refute a principle tenet of TPB (i.e., that background factors that contribute to intentions are fully mediated through beliefs-based TPB constructs). Moreover, it is important to keep in mind that women's potential lack of current consideration of—or possible awareness of—factors in the elicitation sample does not necessarily mean that these factors are completely irrelevant to women's role intentions. Even though they might not be explicitly aware of these beliefs, it is possible that these other factors or beliefs have significant meaning and influence when women's attention is drawn to them and when women are given an opportunity to reflect upon them in relation to their own intended mothering and career roles, as Williamson et al.'s (2014) research suggests.

As their responses indicated, many young women pursuing educations are doing so for the purposes of being able to engage in a career. One potential consideration for future research is to examine slightly more specific aspects of career engagement in a highly educated sample (e.g., intentions to work for specific number of years after graduating, intentions to work full- or part-time) or to expand the population to include individuals who are not pursuing higher education and are less likely to pursue careers. Another potential shortcoming of the current study rests in how work engagement was narrowly limited to careers. Perhaps it would be more relevant to examine all forms of engagement in any form of employment. However, the present

research focused on careers (e.g., more professional roles as opposed to general employment) given that this might increase the likelihood of delayed parenting in order to advance one's career (e.g., seeking higher education, not desiring parental leave early in career, seeking promotions and/or wage increases prior to considering family leaves).

The results of this study are limited in terms of generalizability to young nulliparous women pursuing higher education in Canada. The vast majority of young women in this study expressed strong intentions to pursue a career, which I defined as "having employment within a professional role as opposed to having a 'job.'" As such, future research should to consider how career intentions are operationally defined and compare differences in beliefs across types of work (e.g., unpaid domestic work, work in less professional roles, and work professional roles). In the current sample, on responses to dichotomous role intentions questions all but five of the 349 participants expressed intentions to pursue careers and just 13.9% (n = 48) reported intentions to pursue motherhood. Consequently, the results may not apply to women who do not pursue higher education or to those who intend to work in nonprofessional roles. However, understanding how beliefs may contribute to career intentions in the current sample was still valuable given that women in professional roles are more likely to postpone childbearing and express greater certainty about pursuing motherhood than women in less professional roles (Shreffler, 2017). Nevertheless, future research with a broader sample of women, including those who are not currently pursuing education, and providing a broader range of work options, is required and would likely provide further understanding of the dynamic interplay between education, professional and nonprofessional employment intentions, and mothering roles.

In light of the heteronormative bias in the literature, future research should actively seek to understand the experiences and beliefs that inform intentions of a wider variety of individuals. The current sample identified as predominately white (83.4%) and predominantly heterosexual (92.4%), prohibiting comparisons in the TPB model according to ethnic/cultural background and sexual orientation. As such, the generalizability of the results is largely limited to white, heterosexual women and may not apply to individuals from other ethnic or cultural backgrounds or individuals who are not heterosexual or cis-gender. Future research investigating differences across groups of individuals from various ethnic and cultural backgrounds as well as sexual orientations or gender identities would be valuable in terms of advancing our understanding of fertility and career intentions and informing the development of more tailored interventions.

Additionally, despite having a relatively large sample, the restricted ranges of responses on the intentions items, particularly for careers, as well as the nonnormality of the data for numerous variables may have impacted the strength of relationships observed (see Goodwin & Leech, 2006, for a thorough discussion). Preferred statistical methods for examining causal relationships in theoretical models include graphical models or structural equation modeling (SEM); however, given the number of variables in the expanded models of the TPB in the present study and the non-normality of the data, and although the present sample was quite large, a much larger sample is required to test the various TPB models (Tabachnick & Fidell, 2007; see Wolf, Harrington, Clark, & Miller, 2013, for a discussion of various considerations impacting required sample size for SEM). Future research that aims to assess the applicability of the TPB to multiple role intentions should aim to increase sample size to a degree sufficient to use an SEM approach. Moreover, a larger sample size may permit greater examination of the individual beliefs within each TPB construct that likely contribute to role intentions. Identifying specific beliefs may prove useful for informing policy and educational interventions in order to promote more realistic beliefs and the formation of intentions that they may be more likely to achieve.

The present research was the first study to examine an expanded model of the TPB, taking into account beliefs related to both mothering and career roles and their relationships to intentions. Although this research represents a new step forward in our understanding of role intentions and the TPB, future researchers should more fully statistically examine the individual beliefs that may contribute to role intentions in order to identify specific targets for interventions (see Appendix T). Additionally, future researchers should consider exploring mothering and career intentions as well as various other roles that may be relevant to women. For example, women in the elicitation study identified the possibility of the mothering role conflicting with personal leisure time and ability to engage in social relationships or activities. In addition to leisure role engagement, other roles that may be useful to take into account include that of being a partner or spouse or that of being a caregiver to parents.

7.9 Summary and Conclusion

The present research investigated intentions to become mothers and intentions to pursue a career by testing a theoretical model of behavioural intentions with young nulliparous women seeking university education. It was argued that the TPB could provide a useful framework for understanding young women's decisions to or not to parent or pursue careers; however, it was

also argued that the TPB could be improved by considering beliefs associated with both parenting and career roles simultaneously as well as by considering additional constructs previously shown to be related to role intentions (e.g., salience, gender-role traits, WFC). The current research indicates that the TPB is a useful model for understanding both mothering and career intentions. The utility of the TPB models appeared to be greater for mothering intentions than career intentions. The inclusion of other potentially competing roles added only slightly to the model for mothering intentions—although this also appeared to be less useful for career intentions. Moreover, the TPB model could be further improved by measuring additional background factors that were not captured using the elicitation process to generate TPB beliefs.

Many decisions that may impact mothering and career engagement are made in adolescence and young adulthood. Because of the need for education and work experience and because of the limitations of fertility with age, these roles can be at odds—but they do not necessarily have to be if changes to how women are supported socially and societally are made. Some directions for such changes include efforts to remove potential barriers to role attainment through social policy and education, such as the availability of childcare, flexibility in work hours, workplace policies promoting work-life balance to reduce potential role conflict, policies to reduce the burden of childbearing on career advancement and raises, early education to promote greater balance between career and domestic engagement in both genders, and reducing costs and increasing benefits of engaging in both roles. Such efforts will also, ideally, help to bring greater awareness to the potential impact of various social pressures and societal constraints on role decisions and allow women the freedom to make more informed role decisions.

Women continue to pursue education and careers in ever-growing numbers, outstripping the involvement of previous generations, while the majority also continue to express intentions to become mothers—often with intentions to form larger families than they are actually able to accomplish. Ultimately, the sequalae of struggling to attain and balance these potentially conflicting roles and their demands are great and many (e.g., age-related infertility, poorer mental health, work-related burnout, decreased work productivity, lower work commitment, wage penalties, not fully realizing intended family size). Given the significant pressure on women to pursue multiple roles, suggesting that motherhood is mandated and careers are compulsory, further research that aims to better understand the factors that influence role

intentions and women's eventual behaviours as well as research that leads to the creation of various social and policy supports that allow women to more freely pursue their role intentions is instrumental. Although these roles are presently at odds for many women they do not necessarily need to be. With greater attitudinal changes and societal supports to close the gaps between men and women's career engagement and earnings and between intended and realized fertility, multirole superwomen may be able to hang up their capes and tights and still have it all.

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Appendix A: Ethics Approvals (Elicitation and Main Study)

Elicitation study:

Ethical approval was obtained from the University of Saskatchewan's behavioural research ethics board. This project was deemed minimal risk and approved (BEH# 13-08).

Main study:

Ethical approval was obtained from the University of Saskatchewan's behavioural research ethics board. This project was deemed minimal risk and approved (BEH# 13-125).

Appendix B: Elicitation Study Consent Form

Attitudes and Social Influences Related to Intentions to Mother and Intentions to Have a Career

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PLEASE READ THE FOLLOWING VERY CAREFULLY

You are invited to participate in a study about mothering and career intentions.

Researchers: This study is being conducted by Ava Agar (ava.agar@usask.ca), a doctoral student in clinical psychology at the University of Saskatchewan and under the supervision of Dr. Karen Lawson (karen.lawson@usask.ca; 306-966-2524), department of psychology.

Purpose: For many people young adulthood is characterized by decision making about reproductive and career goals. Previous research has primarily focused on career decision making. In contrast, we would like to know what factors may or may not be relevant to your decision to mother (or not) and your decision to have a career (or not). We are interested in learning about your attitudes and beliefs about mothering and career roles. We are also interested in learning about the people in your life whose values and attitudes may shape your intentions to mother and intentions to have a career and any factors that may help or impede your ability to engage in either role. Your opinions are very important to this research study and may help us learn what factors are important when people make decisions about mothering and career roles.

Procedure: If you decide to participate, you will be asked to complete a pen and paper survey that should take about 20-30 minutes to complete. You will be asked to describe your beliefs about mothering and having a career as well as identify important individuals or groups (e.g., mother, father, friends, sister, grandfather, aunt, peers, coworkers etc.) who may impact your decisions about mothering and career. Finally, you will be asked to identify potential factors that may enable or impede your ability to engage to become a mother or have a career.

Potential Risks and Benefits: There are no known risks for completing this survey. Participants will be provided with one bonus mark per half hour of participation. There is no penalty for choosing not to participate. Completing this survey provides you with a chance to share your attitudes about mothering and contribute to psychological research on intentions to be a mother and intentions to have a career.

Confidentiality: Your participation is confidential and the information you submit will be anonymous. We will not ask you for any identifying information and, once submitted, your informed consent will be detached from your survey. Your responses will only be used as a part

of a larger dataset. The study results will contribute to Ava Agar's (student researcher) dissertation. This research may also be presented at conferences and submitted for journal publication.

Right to Withdraw: Your participation in this study is completely voluntary. You may skip any question you wish. If you wish to withdraw from the study, you may do so at any time, for any reason, without penalty. If you withdraw, your data will not be used and it will be destroyed beyond recovery. Please note that because we do not ask you to provide identifying information on your survey, you will not be able to withdraw your information after submitting your questionnaire. You may contact Ava Agar or Dr. Karen Lawson to receive more information about the study.

Questions: If you have any questions concerning the research project, please feel free to contact the researcher, Ava Agar (telephone: 306-966-6159; ava.agar@usask.ca) or her research supervisor, Dr. Karen Lawson (telephone: 306-966-2524; karen.lawson@usask.ca), at any point. This research project has been approved on ethical grounds by the University of Saskatchewan Research Ethics Board. Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office ethics.office@usask.ca (306) 966-2975. Out of town participants may call toll free (888) 966-2975.

Results: At the end of our study (date: August 2013), we will make a summary of our results available on our reproductive psychology research team website: www.reproductivepsy.usask.ca. You may also choose to contact the researchers by email for a summary of the results.

Consent to Participate: By completing and submitting the questionnaire, you agree that you have read and understood the research study described above. Your signature below indicates that you have been provided with the information necessary to choose to participate in the study and that you have had the opportunity to have your questions answered. You also agree that you understand that you may withdraw your consent to participate at any time and that you have been given a copy of this consent form for your own records.

_____ _____

Participant's Signature Date

_____ _____

Researcher's Signature Date

Appendix C: Elicitation Study Questionnaire

This questionnaire asks you about your mothering and career intentions for the future. Please take a brief moment to consider your future plans about mothering and careers.

<u>Please note these definitions of mothering and career:</u>
Mothering – refers to becoming a mother as the result of biological reproduction or adoption.
Career – refers to having employment within a professional role as opposed to having a "job" (e.g., fast-food or department store clerk).

For each person the ideal time to become a mother and to have a career varies. We are interested in your expectations of mothering (or not) and having a career (or not) in the future at the point when you believe you will be most ready. Please keep this in mind while you complete this survey. Thank you.

Please answer the following honestly.

Do you intend to become a mother? Yes No

Do you intend to have a career? Yes No

Please read each question and rating scale carefully. Please answer truthfully.

1. How likely is it that you will be a mother?

Very Likely						Very Unlikely
1	2	3	4	5	6	7

2. How likely is it that you will have a career?

Very Likely						Very Unlikely
1	2	3	4	5	6	7

3. I plan to be a mother

Strongly Agree						Strongly Disagree
1	2	3	4	5	6	7

4. I plan to have a career

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

Please use the scale below to answer the following questions.

		Not at all important									Very important
1	How important is it for you to have a career?	1	2	3	4	5	6	7	8	9	10
2	How important is it for you to become a mother?	1	2	3	4	5	6	7	8	9	10
3	How important is it for you to become a mother and have a career?	1	2	3	4	5	6	7	8	9	10

Please use the scale below to answer the following questions.

		Strongly Agree									Strongly Disagree
1	Becoming a mother is a top priority life goal.	1	2	3	4	5	6	7	8	9	10
2	Having a career is not a top priority life goal.	1	2	3	4	5	6	7	8	9	10
3	I would feel unsuccessful if I could not become a mother.	1	2	3	4	5	6	7	8	9	10
4	I would feel successful if I could have a career.	1	2	3	4	5	6	7	8	9	10

In this section you will be asked to consider positive and negatives aspects of mothering. Please take a moment to consider each question carefully. Remember, there are no right or wrong answers, we are interested in your honest opinions.

1. For many people there are a number of advantages associated with mothering, what do you believe are the advantages of becoming a mother?

2. For many people there are a number of disadvantages associated with mothering, what do you believe are the disadvantages of becoming a mother?

In this section you will be asked to consider who might approve or disapprove of you being a mother. Please take a moment to consider each question carefully answer honestly. Remember, there are no right or wrong answers, we are interested in your honest opinions.

Please do not use the given names of individuals *(e.g., do not write "Sam" or "Corey" but instead put "brother" or "sister").*

1. Please list all the people or groups you feel would approve of you becoming a mother.

2. Please list all the people or groups you feel would disapprove of you becoming a mother.

3. Are there any other individuals or groups who come to mind when you think about mothering?

In this section you will be asked to consider any circumstances or factors that may enable or impede your ability to become a mother. Please take your time when considering each question. Remember, there are no right or wrong answers, we are interested in your honest opinions.

1. Please describe any circumstances or factors that might make it easier for you to become a mother.

2. Please describe any circumstances or factors that might make it difficult for you to become a mother.

CAREER

In this section you will be asked to consider positive and negatives aspects of having a career. Please take your time to consider each question carefully and answer honestly. There are no right or wrong answers, we are interested in your honest opinions.

1. For many people there are a number of advantages associated with having a career, what do you think are the advantages of having a career?

2. For many people there are a number of disadvantages associated with having a career, what do you think are the disadvantages of having a career?

In this section you will be asked to consider who might approve or disapprove of you having a career. Please take your time when considering each question. Please note that there are no right or wrong answers, we are interested in your honest opinions.

Remember, please do not use the given names of individuals *(e.g., do not write "Sam" or "Corey" but instead put "brother" or "sister").*

1. Please list all of the people or groups you feel would approve of you having a career.

2. Please list all of the people or groups you feel would disapprove of you having a career.

3. Are there any other people or groups who come to mind when you think about having a career?

In this section you will be asked to consider any circumstances or factors that may enable or impede your ability to have a career. Please take your time to consider these factors. Remember, there are no right or wrong answers, we are interested in your honest opinions.

1. Please describe any circumstances or factors that might make it easier for you to have a career.

2. Please describe any circumstances or factors that might make it difficult for you to have a career.

In this section you will be asked to rate some attitudes about becoming a mother and about having a career. Please indicate what you think about becoming a mother and about having a career by making a mark on each line closest to the descriptor that represents how you feel (*see example below*).

Example:
Studying for 12 hours would be…

e.g.	Exciting		X						Boring

This would mean that I think studying is very exciting.

Becoming a mother would be…

1	Pleasant	X							Unpleasant
2	Rewarding	X							Costly
3	Wise	X							Foolish
4	Harmful							X	Beneficial
5	Meaningful	x							Meaningless
6	Not enjoyable							x	Enjoyable
7	Good	x							Bad
8	Stressful							x	Relaxing
9	Valuable	x							Worthless
10	Tiring							x	Energizing

Having a career would be…

11	Good								Bad***R***
12	Stressful								Relaxing
13	Valuable								Worthless***R***
14	Meaningful								Meaningless***R***
15	Tiring								Energizing
16	Pleasant								Unpleasant
17	Rewarding								Costly***R***
18	Wise								Foolish
19	Harmful								Beneficial
20	Not enjoyable								Enjoyable

DEMOGRAPHIC INFORMATION

1. When were you born? _____/_____
month / year

2. Are you a ☐ Male ☐ Female

3. Do you have any children?
☐ Yes ☐ No

4. Which best describes your relationship status? If appropriate, select the two that best apply (for example, divorced & dating)
☐ Single
☐ Dating
☐ Cohabiting/Common-Law
☐ Married
☐ Separated/Divorced
☐ Widowed

5. Have you had 9 or more menstrual cycles in the last 12 months?
☐ Yes ☐ No

6. Do you have any reason to believe that you would be unable to have children?
☐ Yes ☐ No

7. Please indicate which college you are enrolled in: _____

Appendix D: Elicitation Study Debriefing Form

UNIVERSITY OF SASKATCHEWAN

Assessing Mothering and Career Intentions

Thank you for participating in this study!

Young adults must make a number of decisions regarding their future adult lives, goals, and values. Chief among these numerous decisions are choices about parenthood and career—two roles that tend to be in direct opposition to each other. These roles may be in conflict given that for the majority of individuals the pursuit of education and career opportunities occurs during their most fertile years (i.e., early adulthood, less than 35 years of age). Further, negative societal judgments and consequences for engaging in both roles may force individuals to choose between career and reproductive roles (Kemkes-Grottenhaler, 2003). Additionally, young women report being more concerned than young men about the potential for future conflict between these two roles (Lampic et al., 2006). Moreover, this awareness of potential role conflict may ultimately impact young women's intentions to become mothers and other aspects of their reproductive patterns (e.g., reduced family size, delayed parenting) and career decision-making patterns.

Young women's attitudes towards mothering and careers, the values of their social norm groups (e.g., peers, parents, other family), and their feelings of control over these two behaviours may predict their intentions to become a mother or pursue a career. One theory that may illuminate the potential relationships between mothering and career intentions and these attitudinal, social, and control factors is the theory of planned behaviour. This theory suggests personal attitudes, social norms, and perceived control over behaviours will predict a person's intentions to engage in the behaviour in the future (Ajzen, 1985). In addition, however, it is argued that women's career and mothering decisions are not made independent of each other; that is, women's career decisions may be influenced by their mothering intentions and women's mothering decisions may be influenced by their career intentions. Consequently, the researchers seek to investigate whether or not an expanded model based on the theory of planned behaviour accounts for women's career and mothering intentions. Moreover, the current study investigates the potential relationships between mothering and career intentions and other potentially important factors that may influence young women's decision making, such as gender role traits, motherhood and career role salience, anticipated work-family conflict, and fertility knowledge.

The study that you just completed represents the represents the first stage of research designed to apply the theory of planned behaviour to understanding young women's mothering and career decisions. From the data that you and other participants provide in this study, we will be seeking to create themes in terms of attitudes, important individuals, and control factors that may be

influential in making career and mothering decisions. We will then be creating new survey questions that address the themes that you have contributed to in this study. Follow up survey research will then be conducted with a larger sample of participants at the University of Saskatchewan to examine whether or not the theory of planned behaviour helps to contribute to our understanding of the factors influencing young women's mothering and career intentions.

Thank you very much for your participation in this study. If you have any questions or would like a summary of the results, please contact the researchers, Ava Agar (ava.agar@usask.ca; 306-966-6159) or Karen Lawson (karen.lawson@usask.ca; 306-966-2524), or visit our website at www.reproductivepsy.usask.ca. A full summary of the results will be made available online.

Appendix E: Recruitment Materials

Online Study Description for SONA:

Are you a young woman making decisions about mothering and your career path? This is a research study designed to examine your intentions to (or not to) become a mother and your intentions to (or not to) pursue a career. We are interested in factors that may be important to your mothering and career intentions. If you would like to participate, you will be asked to complete an anonymous, online 30-minute survey examining your career and mothering intentions and potentially relevant factors related to your decisions.

Online Study Recruitment for Campus Sample:

Are you a young woman making decisions about mothering and your career path? This is a research study designed to examine your intentions to (or not to) become a mother and your intentions to (or not to) pursue a career. We are interested in factors that may be important to your mothering and career intentions. If you would like to participate, you will be asked to complete an anonymous, online 30-minute survey examining your career and mothering intentions and potentially relevant factors related to your decisions. Participants will be entered into a draw for one of two $100 gift certificates to the Campus Bookstore or the Campus Computer Store at the University of Saskatchewan.

Appendix F: Main Study Informed Consent (Broad Undergraduate Sample)

Assessing Mothering and Career Intentions

PLEASE READ THE FOLLOWING VERY CAREFULLY

You are invited to participate in a study about intentions to mother and to have a career.

Researchers: This study is being conducted by Ava Agar (ava.agar@usask.ca), a doctoral student in clinical psychology at the University of Saskatchewan and under the supervision of Dr. Karen Lawson (karen.lawson@usask.ca; 306-966-2524), department of psychology.

Purpose: Many young adults must make a number of decisions. Young adulthood is often characterized by decision making about reproductive and career goals. The majority of previous research has focused on career decision making. In contrast, we would like to know about both your decisions about mothering and careers. Specifically, we are interested in your attitudes about these roles, the people who may be important to your decision making, and some potential other factors that may influence your decisions (e.g., factors that may influence your control over obtaining these goals, your gender role traits, your perceptions of possible future work-family conflict or balance, and your fertility knowledge). Your participation is important to this research study and will contribute to our knowledge of the factors that shape young adults decisions to mother and/or pursue careers.

Procedure: If you decide to participate, you will be asked to complete an online survey that should take about 25-30 minutes to complete. You will be asked to respond to a series of questions that measure your attitudes and perceptions of factors that may be important to your decisions about mothering and career roles. You will also be asked to complete some demographic questions. Please feel free to ask any questions regarding the procedures and goals of the study or your role.

Potential Risks and Benefits: There are no known or anticipated risks for completing this survey. There is no penalty for choosing not to participate. Completing this survey provides you with a chance to share your attitudes about becoming a mother and having a career and to contribute to psychological research on mothering and career intentions. Participants will be provided with an opportunity to enter a draw for a $100 dollar gift certificate to either the Campus Computer Store or the Campus Bookstore at the University of Saskatchewan. Please submit your email address to participant_draw@yahoo.ca in order to be entered into the draw. By emailing this address, your email address will not be connected to your submitted survey

responses. If you enrolled in a 100-level psychology course, we encourage you to complete this survey through SONA instead in order to obtain your bonus mark credited towards your course.

Confidentiality: Your information is anonymous. We will not ask you for any identifying information. Your responses will only be used as a part of a larger dataset. The results of this research will form the basis of the student-researcher's dissertation and may be presented at conferences as well as submitted for journal publication.

Right to Withdraw: Your participation in this study is completely voluntary. You may contact Ava Agar or Dr. Karen Lawson to receive more information about the study. You may skip any question you wish. If you wish to withdraw from the study, you may do so at any time, for any reason, without explanation or penalty. If you withdraw prior to submitting your survey responses, your data will not be used and it will be destroyed beyond recovery. ***Given that your responses are anonymous, you cannot withdraw your responses once you have submitted your survey.***

Questions: If you have any questions concerning the research project, please contact the researcher, Ava Agar (telephone: 306-966-6159; ava.agar@usask.ca) or her research supervisor, Dr. Karen Lawson (telephone: 306-966-2524; karen.lawson@usask.ca), at any point. This research project has been approved on ethical grounds by the University of Saskatchewan Research Ethics Board. Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office ethics.office@usask.ca (306) 966-2975. Out of town participants may call toll free (888) 966-2975.

Results: At the end of our study (date: August 2014), we will make a summary of our results available on our reproductive psychology research team website: www.reproductivepsy.usask.ca. You may also choose to contact the researchers by email for a summary of the results.

Consent to Participate: By completing and submitting the questionnaire, you agree that you have read and understood the research study described above. You have been provided with the information necessary to choose to participate in the study and that you have had the opportunity to have your questions answered. You also agree that you understand that you may withdraw your consent to participate at any time.

Please print a copy of this page for your records.

By completing and submitting the questionnaire **YOUR FREE AND INFORMED CONSENT IS IMPLIED** and indicates that you understand the above conditions of participation in this study. **If you submit this survey, we will assume that you have given consent to participate in our study.** Please note that to protect anonymity, submitted surveys cannot be withdrawn.

Appendix G: Main Study Informed Consent (Psychology Participant Pool Sample)

Assessing Mothering and Career Intentions

PLEASE READ THE FOLLOWING VERY CAREFULLY

You are invited to participate in a study about intentions to mother and to have a career.

Researchers: This study is being conducted by Ava Agar (ava.agar@usask.ca), a doctoral student in clinical psychology at the University of Saskatchewan and under the supervision of Dr. Karen Lawson (karen.lawson@usask.ca; 306-966-2524), department of psychology.

Purpose: Many young adults must make a number of decisions. Young adulthood is often characterized by decision making about reproductive and career goals. The majority of previous research has focused on career decision making. In contrast, we would like to know about both your decisions about mothering and careers. Specifically, we are interested in your attitudes about these roles, the people who may be important to your decision making, and some potential other factors that may influence your decisions (e.g., factors that may influence your control over obtaining these goals, your gender role traits, your perceptions of possible future work-family conflict or balance, and your fertility knowledge). Your participation is important to this research study and will contribute to our knowledge of the factors that shape young adults decisions to mother and/or pursue careers.

Procedure: If you decide to participate, you will be asked to complete an online survey that should take about 25-30 minutes to complete. You will be asked to respond to a series of questions that measure your attitudes and perceptions of factors that may be important to your decisions about mothering and career roles. You will also be asked to complete some demographic questions. Please feel free to ask any questions regarding the procedures and goals of the study or your role.

Potential Risks and Benefits: There are no known or anticipated risks for completing this survey. There is no penalty for choosing not to participate. Completing this survey provides you with a chance to share your attitudes about becoming a mother and having a career and to contribute to psychological research on mothering and career intentions. Participants will be given one bonus mark credited towards their 100-level psychology course for participating in this study.

Confidentiality: Your information is anonymous. We will not ask you for any identifying information. Your responses will only be used as a part of a larger dataset. The results of this

research will form the basis of the student-researcher's dissertation and may be presented at conferences as well as submitted for journal publication.

Right to Withdraw: Your participation in this study is completely voluntary. You may contact Ava Agar or Dr. Karen Lawson to receive more information about the study. You may skip any question you wish. If you wish to withdraw from the study, you may do so at any time, for any reason, without explanation or penalty. If you withdraw prior to submitting your survey responses, your data will not be used and it will be destroyed beyond recovery. ***Given that your responses are anonymous, you cannot withdraw your responses once you have submitted your survey.***

Questions: If you have any questions concerning the research project, please contact the researcher, Ava Agar (telephone: 306-966-6159; ava.agar@usask.ca) or her research supervisor, Dr. Karen Lawson (telephone: 306-966-2524; karen.lawson@usask.ca), at any point. This research project has been approved on ethical grounds by the University of Saskatchewan Research Ethics Board. Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office ethics.office@usask.ca (306) 966-2975. Out of town participants may call toll free (888) 966-2975.

Results: At the end of our study (date: August 2014), we will make a summary of our results available on our reproductive psychology research team website: www.reproductivepsy.usask.ca. You may also choose to contact the researchers by email for a summary of the results.

Consent to Participate: By completing and submitting the questionnaire, you agree that you have read and understood the research study described above. You have been provided with the information necessary to choose to participate in the study and that you have had the opportunity to have your questions answered. You also agree that you understand that you may withdraw your consent to participate at any time.

Please print a copy of this page for your records.

By completing and submitting the questionnaire **YOUR FREE AND INFORMED CONSENT IS IMPLIED** and indicates that you understand the above conditions of participation in this study. **If you submit this survey, we will assume that you have given consent to participate in our study.** Please note that to protect anonymity, submitted surveys cannot be withdrawn.

Appendix H: Role Intentions and Salience Questions

This questionnaire focuses on your mothering and career intentions. Please take a brief moment to consider your potential future plans about these roles.

<u>Please note these definitions of mothering and career:</u>

Mothering – refers to becoming a mother through biological reproduction or adoption.

Career – refers to having employment within a professional role as opposed to having a "job" (e.g., fast-food or department store clerk).

For each person the ideal time to become a mother and to have a career varies. We are interested in your expectations of mothering (or not) and having a career (or not) in the future <u>at the point when you believe you will be most ready</u>. Please keep this in mind while you complete this survey. Thank you.

Please answer the following honestly.

1. Do you intend to become a mother? Yes No
2. Do you intend to have a career? Yes No

Please read each question and rating scale carefully. Please answer truthfully.

3. How likely is it that you will be a mother?

Very Unlikely						Very Likely
1	2	3	4	5	6	7

4. How likely is it that you will have a career?

Very Unlikely						Very Likely
1	2	3	4	5	6	7

Please read each question and rating scale carefully. Please answer truthfully.

5. I plan to be a mother.

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

6. I plan to have a career.

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

Please use the scale below to answer the following questions.

		Not at All Important									Very Important
7.	How important is it for you to have a career?	1	2	3	4	5	6	7	8	9	10
8.	How important is it for you to become a mother?	1	2	3	4	5	6	7	8	9	10
9.	How important is it for you to both become a mother **<u>and</u>** have a career?	1	2	3	4	5	6	7	8	9	10

Please use the scale below to answer the following questions.

		Strongly Disagree									Strongly Agree
10.	Becoming a mother is a top priority life goal.	1	2	3	4	5	6	7	8	9	10
11.	Having a career is a top priority life goal.	1	2	3	4	5	6	7	8	9	10
12.	I would feel unsuccessful if I could not become a mother.	1	2	3	4	5	6	7	8	9	10
13.	I would feel successful if I could have a career.	1	2	3	4	5	6	7	8	9	10

Appendix I: Direct Measures of Attitudes, Subjective Norms, & Perceived Control

Direct Attitudes

Please indicate what you think about becoming a mother and about having a career by selecting the box that best reflects how you feel (*see example below*).

Example:
Studying for 12 hours would be…

e.g.	Exciting		X						Boring

This would mean that I think studying is very exciting.

Becoming a mother would be…

14.	Pleasant	X							Unpleasant
15.	Rewarding	X							Costly
16.	Wise	X							Foolish
17.	Harmful							X	Beneficial
18.	Meaningful	x							Meaningless
19.	Not enjoyable							x	Enjoyable
20.	Good	x							Bad
21.	Stressful							x	Relaxing
22.	Valuable	x							Worthless
23.	Tiring							x	Energizing

Having a career would be…

24.	Good								Bad***R***
25.	Stressful								Relaxing
26.	Valuable								Worthless***R***
27.	Meaningful								Meaningless***R***
28.	Tiring								Energizing
29.	Pleasant								Unpleasant
30.	Rewarding								Costly***R***
31.	Wise								Foolish
32.	Harmful								Beneficial
33.	Not enjoyable								Enjoyable

Direct Subjective Norms

Please indicate your opinions using the scales provided for each question. As a reminder, by *becoming a mother* we mean <u>becoming a mother at a point in adulthood when you feel you would be ready.</u>

Scale for items:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

1. The people in my life whose opinions I value think I should become a mother.
2. Most of the women that I know are mothers or want to be mothers.
3. Many women like me become mothers.
4. Most of my friends intend to be mothers.
5. It is expected of me that I become a mother. *R
3. The people in my life whose opinions I value think I should have a career.
4. Most of the women that I know have a career or want to have a career.
5. Many women like me have careers.
6. Most of my friends intend to have careers.
7. It is expected of me that I will have a career. *R

Direct Perceived Control

Please indicate your opinions using the scales provided for each question. As a reminder, by *becoming a mother* we mean <u>becoming a mother at a point in adulthood when you feel you would be ready.</u>

Scale for items:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

1. I am confident that if I wanted to become a mother I could.
2. It would be impossible for me to not become a mother. *R
3. For me, it would be extremely difficult to not become a mother. *R
4. Whether or not I become a mother is completely up to me.
5. I am confident that if I wanted to have a career I could.
6. It would be impossible for me to not have a career. *R
7. For me, it would be extremely difficult to not have a career. *R
8. Whether or not I have a career is completely up to me.

Appendix J: Belief-Based Measures of Attitudes

Mothering Attitudes

Please indicate your opinions using the scales provided for each question. As a reminder, by *becoming a mother* we mean <u>becoming a mother at a point in time when you feel you would be ready.</u>

Scale for A items:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

Scale for B items:

Extremely Undesirable	Moderately Undesirable	Slightly Undesirable	Neither Desirable nor Undesirable	Slightly Desirable	Moderately Desirable	Extremely Desirable
1	2	3	4	5	6	7

1a. Becoming a mother would help me build a family.

1b. For me, building a family would be…

2a. Becoming a mother would be personally rewarding

2b. For me, the personal rewards of mothering would be…

3a. Becoming a mother would give me a sense of achievement.

3b. For me, the sense of achievement from mothering would be…

4a. Becoming a mother would allow me to build a strong maternal bond with my child.

4b. For me, building a strong maternal bond with my child would be…

5a. Becoming a mother would provide opportunity for personal growth.

5b. For me, personal growth associated with mothering would be…

6a. Becoming a mother would allow me to continue my family line.

6b. For me, continuing my family line would be…

7a. Becoming a mother would be financially costly.*R

7b. For me, the financial costs of mothering would be…

8a. Becoming a mother would be stressful.

8b. For me, the stress of mothering would be…

9a. Becoming a mother would negatively impact my career.

9b. For me, the negative impact of mothering on my career would be…

10a. Becoming a mother would negatively change my relationships with my spouse, family, and/or friends.

10b For me, the negative changes to my relationships would be…

11a. Becoming a mother would be very time consuming.

11b. For me, the time consuming aspect of mothering would be…

12a. Becoming a mother would cause me to worry about having bad children (e.g., difficult, troubled children).

12b. For me, worry about having bad (e.g., difficult, troubled) children would be…

13a. Becoming a mother would require great responsibility.

13b. For me, the responsibility of mothering would be…

Career Attitudes

Please indicate your opinions using the scales provided for each question. As a reminder, by *having a career* we mean <u>having a career at a point in time when you feel you would be ready.</u>

Scale for A items:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

Scale for B items:

Extremely Undesirable	Moderately Undesirable	Slightly Undesirable	Neither Desirable nor Undesirable	Slightly Desirable	Moderately Desirable	Extremely Desirable
1	2	3	4	5	6	7

1a. Having a career would provide me with financial security.
1b. For me, financial security from having a career would be…
2a. Having a career would provide me with a sense of personal achievement.
2b. For me, having a sense of personal achievement from having a career would be…
3a. Having a career would allow me to feel like I was contributing to society.
3b. For me, feeling like I was contributing to society through my career would be…
4a. Having a career would increase my social network.
4b. For me, having an increased social network would be…
5a. Having a career would provide me with an opportunity for personal growth.
5b. For me, personal growth from having a career would be…
6a. Having a career would cause negative changes in my relationships (e.g., spouse, family, friends). *R
6b. For me, negative changes in my relationships from having a career would be…
7a. Having a career would reduce my leisure time. *R
7b. For me, a reduction in my leisure time from having a career would be…
8a. Having a career would be stressful. *R
8b. For me, the stress from having a career would be…

Appendix K: Belief-Based Measures of Subjective Norms

This section asks you about people who may approve or disapprove of you becoming a mother. Remember, by *becoming a mother* we mean <u>becoming a mother at a point in time when you feel you would be ready.</u>

Scale for A items:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

Scale for B items:

Not at All	Very Little	Slightly	Somewhat	Moderately	Very Much	Entirely	N/A
1	2	3	4	5	6	7	

1a. My mother thinks that I should become a mother.

1b. With respect to becoming a mother, how much do you care what your mother thinks you should do?

2a. My father thinks that I should become a mother.

2b. With respect to becoming a mother, how much do you care what your father thinks you should do?

3a. My friends think that I should become a mother.

3b. With respect to becoming a mother, how much do you care what your friends think you should do?

4a. My family (other than my parents) thinks that I should become a mother.

4b. With respect to becoming a mother, how much do you care what your family (other than your parents) think you should do?

5a. Most of society (including my community, religious institutions, etc.) thinks I should become a mother.

5b. With respect to becoming a mother, how much do you care what most of society (including your community, religious institutions, etc.) thinks you should do?

6a. Most people think I should become a mother.

6b. With respect to becoming a mother, how much do you care what most people think you should do?

Career Subjective Norms

This section asks you about people who may approve or disapprove of you having a career. Remember, by *having a career* we mean <u>having a career at a point in time when you feel you would be ready.</u>

Scale for A items:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

Scale for B items:

Not at All	Very Little	Slightly	Somewhat	Moderately	Very Much	Entirely	N/A
1	2	3	4	5	6	7	

1a. My mother thinks that I should have a career.

1b. With respect to having a career, how much do you care what your mother thinks you should do?

2a. My father thinks that I should have a career.

2b. With respect to having a career, how much do you care what your father thinks you should do?

3a. My friends think that I should have a career.

3b. With respect to having a career, how much do you care what your friends think you should do?

4a. Most people think I should have a career.

4b. With respect to having a career, how much do you care what most people you should do?

5a. My family (other than my parents) thinks that I should have a career.

5b. With respect to having a career, how much do you care what your family (other than your parents) think you should do?

6a. Most of society (including my community, religious institutions, etc.) thinks I should have a career.

6b. With respect to having a career, how much do you care what most of society (including your community, religious institutions, etc.) thinks you should do?

Appendix L: Belief-Based Measures of Perceived Control

Mothering Perceived Control

This section asks you about factors that may facilitate or impede your ability to become a mother. Remember, by *becoming a mother* we mean <u>becoming a mother at a point in time when you feel you would be ready.</u>

Scale for A items:

Extremely Unlikely	Moderately Unlikely	Slightly Unlikely	Neither Unlikely nor Likely	Slightly Likely	Moderately Likely	Extremely Likely
1	2	3	4	5	6	7

Scale for B items:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

1a. I will be financially stable in adulthood.

1b. Having financial stability would make it easier for me to become a mother.

2a. I will have a stable relationship in adulthood.

2b. Having a stable relationship would make it easier for me to become a mother.

3a. I will not have concerns about the impact of mothering on my career or schooling in adulthood.

3b. Not having concerns about the impact of mothering on my career or schooling would make it easier to become a mother.

4a. I will have social supports (e.g., family, partner, friends) in adulthood.

4b. Social support would make it easier for me to become a mother.

5a. I will be emotionally and physically healthy in adulthood.

5b. Being emotionally and physically healthy would make it easier to become a mother.

6a. I will not have a spouse or partner in adulthood. *R

6b. Not having a spouse or partner would make it easier to become a mother.

7a. I will have other time commitments (e.g., career, school) in adulthood. *R

7b. Having other time commitments (e.g., career, school) would make it easier for me to become a mother.

8a. I will have an unstable lifestyle (e.g., no permanent address, partying, no income) in adulthood.

8b. Having an unstable lifestyle (e.g., no permanent address, partying, no income) would make it easier for me to become a mother.

Career Perceived Control

This section asks you about factors that may facilitate or impede your ability to have a career. Remember, by *having a career* we mean <u>having a career at a point in time when you feel you would be ready.</u>

Scale for A items:

Extremely Unlikely	Moderately Unlikely	Slightly Unlikely	Neither Unlikely nor Likely	Slightly Likely	Moderately Likely	Extremely Likely
1	2	3	4	5	6	7

Scale for B items:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

1a. I will have an education/degree in adulthood.

1b. Having an education/degree would make it easier to have a career.

2a. I will have social supports (e.g., family, partner, friends) in adulthood.

2b. Social support would make it easier for me to have a career.

3a. I will have children in adulthood.

3b. Having children would make it easier for me to have a career.

4a. I will not be worried about money for school.

4b. Not worrying about money for school would make it easier to have a career.

Appendix M: Bem's Sex Role Inventory

Alternating Instrumental, Expressive, Neutral Gender Traits

Below is a list of personality traits, please rate how well each of these traits describes you. Please answer honestly.

		Never or Almost Never True				Always or Almost Always True
1	Self reliant	1	2	3	4	5
2	Yielding	1	2	3	4	5
3	Helpful	1	2	3	4	5
4	Defends own beliefs	1	2	3	4	5
5	Cheerful	1	2	3	4	5
6	Moody	1	2	3	4	5
7	Independent	1	2	3	4	5
8	Shy	1	2	3	4	5
9	Conscientious	1	2	3	4	5
10	Athletic	1	2	3	4	5
11	Affectionate	1	2	3	4	5
12	Theatrical	1	2	3	4	5
13	Assertive	1	2	3	4	5
14	Flatterable	1	2	3	4	5
15	Happy	1	2	3	4	5
16	Strong personality	1	2	3	4	5
17	Loyal	1	2	3	4	5
18	Unpredictable	1	2	3	4	5
19	Forceful	1	2	3	4	5
20	Feminine	1	2	3	4	5
21	Reliable	1	2	3	4	5
22	Analytical	1	2	3	4	5
23	Sympathetic	1	2	3	4	5
24	Jealous	1	2	3	4	5
25	Leadership ability	1	2	3	4	5
26	Sensitive to other's needs	1	2	3	4	5
27	Truthful	1	2	3	4	5
28	Willing to take risks	1	2	3	4	5
29	Understanding	1	2	3	4	5
30	Secretive	1	2	3	4	5
31	Makes decisions easily	1	2	3	4	5
32	Compassionate	1	2	3	4	5
33	Sincere	1	2	3	4	5
34	Self-sufficient	1	2	3	4	5
35	Eager to soothe hurt feelings	1	2	3	4	5
36	Conceited	1	2	3	4	5

37	Dominant	1	2	3	4	5
38	Soft spoken	1	2	3	4	5
39	Likable	1	2	3	4	5
40	Masculine	1	2	3	4	5
41	Warm	1	2	3	4	5
42	Solemn	1	2	3	4	5
43	Willing to take a stand	1	2	3	4	5
44	Tender	1	2	3	4	5
45	Friendly	1	2	3	4	5
46	Aggressive	1	2	3	4	5
47	Gullible	1	2	3	4	5
48	Inefficient	1	2	3	4	5
49	Acts as a leader	1	2	3	4	5
50	Childlike	1	2	3	4	5
51	Adaptable	1	2	3	4	5
52	Individualistic	1	2	3	4	5
53	Does not use harsh language	1	2	3	4	5
54	Unsystematic	1	2	3	4	5
55	Competitive	1	2	3	4	5
56	Loves children	1	2	3	4	5
57	Tactful	1	2	3	4	5
58	Ambitious	1	2	3	4	5
59	Gentle	1	2	3	4	5
60	Conventional	1	2	3	4	5

Appendix N: Anticipated Work-Family Conflict Scale

		Strongly Disagree				Strongly Agree
1	My work *will* keep me from my family activities more than I would like.	1	2	3	4	5
2	The time that I *will have to* devote to my job *will* keep me from participating equally in household responsibilities and activities.	1	2	3	4	5
3	I *will* have to miss family activities due to the amount of time I must spend on work responsibilities.	1	2	3	4	5
4	The time I *will* spend with my family *will* often cause me not to spend time in activities at work that could be helpful to my career.	1	2	3	4	5
5	I *will* have to miss work activities due to the amount of time I must spend on family responsibilities.	1	2	3	4	5
6	When I get home from work I *will* often *be* too frazzled to participate in family activities/responsibilities.	1	2	3	4	5
7	I *will* often *be* so emotionally drained when I get home from work that it *will* prevent me from contributing to my family.	1	2	3	4	5
8	Due to all the pressures *I will have* at work, sometimes when I come home I *will be* too stressed to do the things I enjoy.	1	2	3	4	5
9	Due to stress *I will have* at home, I *will* often *be* preoccupied with family matters at work.	1	2	3	4	5
10	Because I *will* often *be* stressed from family responsibilities, I *will* have a hard time concentrating on my work.	1	2	3	4	5
11	Tension and anxiety from my family life *will* often weaken my ability to do my job.	1	2	3	4	5
12	The problem-solving behaviours I *will* use in my job *will* not *be* effective in resolving problems at home.	1	2	3	4	5
13	Behaviour that *will be* effective and necessary for me at work would be counterproductive at home.	1	2	3	4	5
14	The behaviours I *will* perform that make me effective at work *will* not help me to be a better parent and spouse.	1	2	3	4	5
15	The behaviours that *will* work for me at home *will* not seem to be effective at work.	1	2	3	4	5
16	Behaviour that *will be* effective and necessary for me at home would be counterproductive at work.	1	2	3	4	5
17	The problem-solving behaviour that *will* work for me at home *will* not seem to be as useful at work.	1	2	3	4	5
18	The time I *will* spend on family responsibilities *will* often interfere with my work responsibilities.	1	2	3	4	5

Appendix O: Fertility Awareness Questions

These questions ask you about your plans for having children (when and how many) and your beliefs and knowledge about assisted reproductive technology. Please answer the following honestly.

224. If you intend to have children, are there any particular goals or accomplishments you feel you must achieve prior to starting a family? (e.g., emotional maturity, graduate college/university, marriage, establish a career, travel, financial security, etc). ***(please list all goals that apply)***

_____
_____
_____

225. How many children do you hope to have? ***(For example, 0, 1, 2, etc.)*** _____

226. If you plan on children, how much time in total do you expect to take off of work? ***(For example, 0 [no time off], 6 months, 1 year and 3 months, or 5 years)*** _____

227. About how old do you intend to be when you become pregnant with your ***first*** child? ____

228. If you intend to have more than one child, about how old do you intend to be when you give birth to your ***last*** child? _____

229. About how many months do you expect it to take to get pregnant once you start trying? ___

230. How upset would you feel if you were never able to bear a child? *R

Extremely Upset						Not Upset
1	2	3	4	5	6	7

231. If you were having difficulty conceiving, how likely would you be to seek assisted reproductive technologies to help you become a parent?

Not at All Likely						Very Likely
1	2	3	4	5	6	7

232. Do you plan to rely on using assisted reproductive technologies to help you become a parent?

Not at All						Very Much
1	2	3	4	5	6	7

233. In your estimation, what percentage of people are successful (i.e., have a baby/live birth) using assisted reproductive technologies? ***Assisted reproductive technologies are medical interventions that are used to try to help individuals conceive. There are a range of assisted reproductive technologies, which may involve hormone injections for women, egg and sperm combination outside of the body and implantation of the embryo as well as the use of donor sperm and/or donor eggs.***

5%	10%	15%	20%	25%	30%	35%	40%	45%	50%
55%	60	65%	70%	75%	80%	85%	90%	95%	100%

234. In your estimation, what percentage of people are successful (i.e., have a baby/live birth) using in vitro fertilization?

5%	10%	15%	20%	25%	30%	35%	40%	45%	50%
55%	60	65%	70%	75%	80%	85%	90%	95%	100%

Appendix P: Demographic Information Questions

Please take just a couple more minutes to provide some nonidentifying information about yourself so that we know the general characteristics of the people who participated in this survey.

235. What month and year were you born? _____

236. What is your gender? Male Female

237. With which racial or ethnic group do you most identify?

White Black First Nations Metis
Hispanic Asian South Asian Other: _____

238. With what sexual orientation do you most identify?

Heterosexual Bisexual Gay
Lesbian Transsexual Queer
Querying Two-spirited Other: _____

239. What is your current relationship status?

Single Dating – Not Committed Relationship Dating – Committed Relationship
Common-Law Married Separated/Divorced Widowed
Other, please specify: _____

240. If you have a partner,
- what month and year was he/she born? _____
- does your partner want to have children? Yes No

241. Are you a parent? Yes No
If yes,
a. How many children do you have? _____
- How old are they? _____

242. Have you had 9 or more menstrual cycles in the last 12 months? Yes No

243. Do you have any reason to believe that you would be unable to have children? Yes No

244. When you were growing up, was your mother employed? Yes No
If yes,
- What was her occupation? _____
- Did she work before you (or your siblings) were born? Yes No
- Did she work after you (or your siblings) were born and ***before*** you (or your siblings) were in grade school? Yes No
- Did she work after you (or all of your siblings) started grade school? Yes No

245. What is your intended career? _____

246. What college are you enrolled in? ***(e.g., College of Arts & Sciences)*** _____

247. What program are you enrolled in?

Business/Commerce Natural Sciences Social Sciences
Fine Arts Education Undeclared
Other: _____

Thank you for your responses in this survey.

Appendix Q: Main Study Debriefing Form

UNIVERSITY OF SASKATCHEWAN

Assessing Mothering and Career Intentions

Thank you for participating in this study!

Young adults must make a number of decisions regarding their future adult lives, goals, and values. Chief among these numerous decisions are choices about parenthood and career—two roles that tend to be in direct opposition to each other. These roles may be in conflict given that for the majority of individuals the pursuit of education and career opportunities occurs during their most fertile years (i.e., early adulthood, less than 35 years of age). Further, negative societal judgments and consequences for engaging in both roles may force individuals to choose between career and reproductive roles (Kemkes-Grottenhaler, 2003). Additionally, young women report being more concerned than young men about the potential for future conflict between these two roles (Lampic et al., 2006). Moreover, this awareness of potential role conflict may ultimately impact young women's intentions to become mothers and other aspects of their reproductive patterns (e.g., reduced family size, delayed parenting) and career decision-making patterns.

Young women's attitudes towards mothering and careers, the values of their social norm groups (e.g., peers, parents, other family), and their feelings of control over these two behaviours may predict their intentions to become a mother or pursue a career. One theory that may illuminate the potential relationships between mothering and career intentions and these attitudinal, social, and control factors is the theory of planned behaviour. This theory suggests personal attitudes, social norms, and perceived control over behaviours will predict a person's intentions to engage in the behaviour in the future (Ajzen, 1985). In addition, however, it is argued that women's career and mothering decisions are not made independent of each other; that is, women's career decisions may be influenced by their mothering intentions and women's mothering decisions may be influenced by their career intentions. Consequently, the researchers seek to investigate whether or not an expanded model based on the theory of planned behaviour accounts for women's career and mothering intentions. Moreover, the current study investigates the potential relationships between mothering and career intentions and other potentially important factors that may influence young women's decision making, such as gender role traits, motherhood and career role salience, anticipated work-family conflict, and fertility knowledge.

The study that you just completed represents the represents the first stage of research designed to apply the theory of planned behaviour to understanding young women's mothering and career decisions. From the data that you and other participants provide in this study, we will be seeking to create themes in terms of attitudes, important individuals, and control factors that may be

influential in making career and mothering decisions. We will then be creating new survey questions that address the themes that you have contributed to in this study. Follow up survey research will then be conducted with a larger sample of participants at the University of Saskatchewan to examine whether or not the theory of planned behaviour helps to contribute to our understanding of the factors influencing young women's mothering and career intentions.

Thank you very much for your participation in this study. If you have any questions or would like a summary of the results, please contact the researchers, Ava Agar (ava.agar@usask.ca; 306-966-6159) or Karen Lawson (karen.lawson@usask.ca; 306-966-2524), or visit our website at www.reproductivepsy.usask.ca. A full summary of the results will be made available online.

Appendix R: Missing Data Analyses

Table R.1. ***Summary of Little's Missing Completely at Random test results for each scale.***

	Statistics			
N = 349	*df*	*N*	χ^2	*p* value
Mother Direct				
Attitudes	70	3490	66.77	.59
Subjective norms	4	1745	0.60	.96
Perceived control	3	1396	4.54	.21
Mother Belief-Based				
Attitudes	139	4537	171.55	.03
Subjective norms	36	2094	49.38	.07
Perceived control	42	2792	48.10	.24
Career Direct				
Attitudes	33	3490	24.88	.90
Subjective norms	8	1745	3.65	.89
Perceived control	3	1396	0.39	.94
Career Belief-Based				
Attitudes	46	2792	57.10	.13
Subjective norms	26	1745	22.74	.65
Perceived control	5	1396	1.16	.95
Mothering Intentions	2	698	5.95	.05
Career Intentions	1	698	0.20	.66
Mothering Salience	4	1047	2.38	.67
Career Salience	4	1047	3.48	.48
Instrumental traits	95	6980	114.85	.08
Expressive traits	222	6980	246.78	.12
Work to family conflict	48	3141	55.02	.23
Family to work conflict	63	3141	89.26	.02

Appendix S: Item-Level Analyses

Table S.1. ***Belief-based TPB scale item descriptive statistics.***

Belief-Based Items	Descriptive Statistics				
N = 349	*M*	*Mdn*	*SD*	Skew	Kurtosis
Mothering Attitudes					
Build family	38.51	49.00	13.43	-9.85	2.58
Maternal bond	42.37	42.37	11.03	-15.83	15.27
Personal growth	38.47	38.47	13.14	-10.32	4.11
Continue family line	32.04	32.04	13.12	-2.92	-2.59
Financially costly	5.56	5.56	4.56	15.04	20.03
Impact career (negatively)	10.49	10.49	6.59	6.13	2.67
Change relationships (negatively)	11.50	11.50	7.48	6.98	-0.27
Worry about bad children	7.72	7.72	6.91	12.47	9.79
Personally rewarding	39.37	39.37	13.39	-10.69	3.73
Sense of achievement	35.60	35.60	14.58	-6.87	-1.13
Stressful	7.77	7.77	5.08	-6.42	2.25
Time consuming	6.44	6.44	4.65	-14.24	23.83
Responsibility	6.06	6.06	3.93	-37.68	172.16
Career Attitudes					
Financial security	42.51	42.00	8.39	-12.11	11.22
Sense of achievement	41.52	41.52	9.20	-10.66	7.80
Contribute to society	35.65	35.65	12.08	-4.34	-2.07
Increase social network	32.69	32.69	11.03	-1.97	-2.33
Personal growth	32.32	32.32	15.15	-3.10	-4.72
Change relationships (negatively)	8.18	8.18	5.31	17.16	29.46
Reduce leisure time	9.30	9.30	5.02	6.52	3.93
Stressful	9.70	9.70	5.16	5.54	1.52
Mothering Subjective Norms					
Mother	32.66	35.00	14.71	-3.96	-3.85
Father	30.73	30.73	15.73	-2.83	-4.68
Friends	24.94	24.94	15.50	1.72	-4.92
Family (not parents)	24.30	24.30	13.28	1.67	-3.46
Most people	10.79	10.79	8.50	10.85	8.42
Most of society	22.25	22.25	16.62	3.13	-5.17
Career Subjective Norms					
Mother	28.31	36.00	12.51	-1.77	-3.95
Father	33.79	33.79	13.12	-5.25	-1.65
Friends	16.50	16.50	11.93	4.54	-1.68
Family (not parents)	27.69	27.69	14.02	-0.31	-4.49
Most people	12.99	12.99	9.67	5.98	1.29
Most of society	16.96	16.96	9.71	5.12	-0.21
Mothering Perceived Control					
Financially stable	32.30	42.00	13.54	-2.40	-5.28
Stable relationships	36.79	36.79	11.62	-6.21	-1.53
Impact career	16.20	16.20	12.78	7.42	-0.30
Social supports	37.14	37.14	12.15	-6.85	0.04
Health	33.56	33.56	13.05	-3.70	-3.65
Spouse	35.44	35.44	11.95	-6.28	-0.25
Other time commitments	7.54	7.54	7.57	14.54	13.14
Unstable lifestyle	36.37	36.37	14.21	-4.70	-4.57
Career Perceived Control					
Education	43.59	42.00	8.69	-21.33	39.31
Children[a]	28.56	28.56	12.20	-1.46	-3.18
Social supports	39.89	39.89	8.93	-7.85	5.09
Money[a]	7.63	7.63	6.58	16.58	27.42

Note. For all scales higher scores represent greater endorsement. [a]Item omitted from overall scale.

Table S.2. ***Direct TPB scale item descriptive statistics.***

Direct TPB Measure Items	Descriptive Statistics				
N = 349	*M*	*Mdn*	*SD*	Skew	Kurtosis
Mothering Attitudes					
Pleasant	5.90	7.00	1.62	-13.97	9.55
Rewarding	6.13	6.13	1.66	-16.47	13.56
Wise	5.23	5.23	1.55	-5.95	0.33
Meaningful	6.33	6.33	1.46	-19.79	23.34
Good	5.94	5.94	1.45	-13.13	10.48
Valuable	6.21	6.21	1.32	-17.15	20.34
Beneficial	5.64	5.64	1.63	-8.52	0.89
Enjoyable	5.62	5.62	1.89	-11.05	2.92
Relaxing	2.26	2.26	1.12	8.76	7.42
Energizing	2.26	2.26	1.30	9.39	5.66
Career Attitudes					
Pleasant	6.04	7.00	0.85	-7.23	3.27
Rewarding	6.51	6.51	0.74	-14.64	18.15
Wise	6.54	6.54	0.84	-14.95	11.89
Meaningful	6.27	6.27	0.79	-7.00	1.28
Good	6.66	6.66	0.59	-15.01	17.73
Valuable	6.65	6.65	0.58	-12.27	9.40
Beneficial	6.38	6.38	0.99	-14.59	13.10
Enjoyable	5.82	5.82	1.15	-12.00	11.05
Relaxing	2.57	2.57	1.16	10.24	8.80
Energizing	3.01	3.01	1.49	8.04	1.68
Mothering Subjective Norms					
People with valued opinions	5.65	6.00	1.55	-9.42	4.01
Most women	5.68	5.68	1.35	-9.42	5.09
Women like me	5.48	5.48	1.47	-7.71	2.34
Most friends	5.80	5.80	1.29	-11.56	9.93
Expect of me	4.89	4.89	1.79	-5.24	-1.58
Career Subjective Norms					
People with valued opinions	6.37	6.37	1.11	-18.56	25.36
Most women	5.82	5.82	1.24	-10.16	6.71
Women like me	5.94	5.94	1.19	-8.15	2.10
Most friends	6.03	6.03	1.18	-11.11	8.07
Expect of me	6.21	6.21	1.11	-14.94	18.16
Mothering Direct Perceived Control					
Difficult not to[a]	4.03	6.00	1.95	-1.00	-4.52
Completely up to me	5.82	5.82	1.26	-8.60	4.27
Confident I could	5.54	5.54	1.51	-7.09	0.86
Impossible	5.62	5.62	1.49	-7.01	-0.47
Career Direct Perceived Control					
Difficult not to[a]	3.69	6.00	2.14	-0.69	-5.98
Completely up to me	6.18	6.18	0.97	-10.41	8.27
Confident I could	6.42	6.42	0.94	-15.90	21.43
Impossible	6.35	6.35	1.03	-12.12	6.37

Note. For all scales higher scores represent greater endorsement. [a]Item omitted from overall scale.

Appendix T: Belief-Based and Direct Item-Level Analyses

Table T.1. ***Contribution of belief-based TPB construct scale items to the prediction of mothering intentions.***

	Variance Statistics						Test Statistics		
Scale Item	*R*	R^2	R^2_{adj}	*B*	β	r_{sp}	*F*	df_1, df_2	*p*
Mothering Attitudes	.74	.54	.53				30.79	13,	< .001
Build family				0.23	.19	.16			.003
Maternal bond				-0.02	-.01	-.01			.84
Personal growth				0.01	.01	.01			.87
Continue family line				0.07	.06	.07			.23
Financially costly				-0.11	0.03	-.04			.49
Impact career				0.13	.05	.07			.24
Change relationships				-0.06	-.03	-.03			.53
Worry about bad children				0.05	.02	.03			.61
Personally rewarding				0.35	.29	.21			< .001
Sense of achievement				0.25	.22	.17			.002
Stressful				0.24	.07	.08			.15
Time consuming				0.28	.08	.09			.12
Responsibility				0.08	.02	.02			.66
Mothering Subjective Norms	.34	.12	.10				7.60	6, 348	< .001
Mother				0.28	.18	.13			.01
Father				0.19	.25	.09			.09
Friends				0.01	.01	.01			.92
Family (not parents)				-0.03	-.03	-.02			.77
Most people				0.16	.08	.09			.11
Most of society				-0.10	-.10	-.06			.26
Mothering Perceived Control	.67	.45	.43				34.24	8, 340	< .001
Financially stable				-0.25	-.21	-.15			.007
Stable relationships				0.65	.46	.32			< .001
Impact career				-.30	-.23	-.28			< .001
Social supports				0.17	.12	.11			.04
Health				0.16	.13	.09			.09
Spouse				0.10	.08	.05			.32
Other time commitments				0.51	.23	.28			< .001
Unstable lifestyle				-0.21	-.18	-.15			.007
Career Attitudes	.29	.08	.06				3.79	8, 240	< .001
Financial security				-0.10	-.05	-.04			.47
Sense of achievement				-0.22	-.12	-.09			.10
Contribute to society				-0.13	-.10	-.07			.19
Increase social network				0.20	.13	.12			.03
Personal growth				0.04	.03	.02			.70
Change relationships				-0.13	-.04	-.04			.45
Reduce leisure time				0.70	.21	.18			.001
Stressful				-0.74	-.23	-.19			< .001

Note. Item-level analyses only conducted for scales found to significantly predict mothering intentions based on hierarchical regression presented in Table 6.6.

Table T.2. ***Contribution of belief-based TPB construct scale items to the prediction of career intentions.***

	Variance Statistics						Test Statistics		
Scale Item	*R*	R^2	R^2_{adj}	*B*	β	r_{sp}	*F*	df_1, df_2	*p*
Career Attitudes	.34	.12	.10				5.67	8, 340	< .001
Financial security				0.19	.15	.12			.03
Sense of achievement				0.30	.27	.19			< .001
Contribute to society				0.03	.03	.09			.67
Increase social network				0.07	.08	.07			.20
Personal growth				-0.17	-.25	-.16			.002
Change relationships				-0.06	-.03	-.03			.60
Reduce leisure time				0.00	.00	.00			.97
Stressful				0.23	.12	.10			.06
Career Perceived Control	.24	.06	.05				10.46	2, 346	< .001
Education				0.93	.02	.02			.74
Social supports				0.26	.23	.19			< .001
Mothering Subjective Norms	.22	.05	.03				2.91	6, 342	.009
Mother				-0.13	-.19	-.10			.07
Father				0.19	.29	.14			.008
Friends				0.11	.16	.09			.12
Family				-0.06	-.08	-.05			.37
Most people				-0.09	-.07	-.03			.61
Society				-0.03	-.05	-.07			.17

Note. Item-level analyses only conducted for scales found to significantly predict career intentions based on hierarchical regression presented in Table 6.7.

Table T.3. ***Belief-based attitudes for women who intend to mother and women who intend to be childfree.***

	Mothering Groups				*t*-test Statistics			
	Intended $N = 297$		Not Intended $N = 48$					
Attitudinal Items	*M*	*SD*	*M*	*SD*	*df*	*t*	*p* value	Cohen's *d*
Mothering								
Build family	41.59	10.72	19.63	13.44	57.05	10.78	< .001	3.83
Maternal bond	44.82	7.76	27.46	15.89	50.58	7.43	< .001	1.77
Personal growth	41.77	9.69	18.83	14.47	54.01	10.60	< .001	3.02
Continue family line	34.01	12.03	19.38	12.91	343	7.74	< .001	4.42
Financially costly	5.92	4.55	3.33	3.88	343	3.72	< .001	1.54
Impact career	11.31	6.40	5.35	5.49	343	6.10	< .001	2.56
Change relationships	11.88	7.22	9.58	8.87	57.49	1.71	.09	0.63
Worry about bad children	8.10	7.04	5.06	5.27	343	2.86	.005	0.92
Personally rewarding	43.23	9.08	16.13	12.37	55.48	14.56	< .001	4.56
Sense of achievement	39.39	11.25	12.60	11.39	343	15.27	< .001	21.28
Stressful	8.41	4.99	3.83	3.85	343	6.06	< .001	2.04
Time consuming	7.01	4.64	3.04	3.14	84.36	7.53	< .001	1.64
Responsibility	6.50	3.86	3.42	3.36	343	5.21	< .001	2.29
Career								
Financial security	42.29	8.44	44.38	7.50	343	-1.61	.11	-0.76
Sense of achievement	41.13	9.25	44.04	8.57	343	-2.03	.04	-1.18
Contribute to society	35.20	12.02	38.65	12.34	343	-1.84	.07	-1.75
Increase social network	32.60	10.58	33.73	13.69	56.44	-0.55	.59	-0.18
Personal growth	31.57	14.99	37.08	15.25	343	-2.36	.02	-2.78
Change relationships	8.02	5.23	9.08	5.87	343	-1.29	.20	-0.56
Reduce leisure time	9.47	5.14	8.21	4.14	72.67	1.89	.11	0.58
Stressful	9.51	4.98	10.40	5.58	343	-1.12	.26	-0.50

Note. All findings supported by bootstrapping and nonparametric Mann-Whitney *U* tests. The corrected *p* value for mothering items is $\alpha = .004$ and the corrected *p* value for career items is $\alpha = .013$.

Table T.4. ***Belief-based subjective norms for women who intend to mother and women who intend to be childfree.***

	Mothering Groups				*t*-test Statistics			
	Intended $N = 297$		Not Intended $N = 48$					
Subjective Norm Items	*M*	*SD*	*M*	*SD*	*df*	*t*	*p* value	Cohen's *d*
Mothering								
Mother	34.49	13.64	21.69	16.24	343	5.87	< .001	2.05
Father	32.42	15.02	20.79	16.08	343	4.93	< .001	2.86
Friends	26.47	15.26	15.72	13.92	66.63	4.90	< .001	2.43
Family (not parents)	25.55	12.74	16.60	14.25	343	4.44	< .001	1.98
Most people	11.24	8.79	7.94	5.80	86.44	3.37	.001	0.71
Most of society	23.51	16.56	14.67	14.68	67.86	3.80	< .001	1.63
Career								
Mother	28.96	12.45	24.77	12.42	343	2.16	.03	6.86
Father	35.02	12.79	26.46	13.07	343	4.29	< .001	4.50
Friends	16.41	12.15	17.21	11.06	343	-0.43	.67	-0.22
Family (not parents)	28.50	13.97	22.54	13.52	343	2.76	.006	2.40
Most people	13.20	9.98	11.58	7.90	73.62	1.26	.21	0.38
Most of society	17.71	9.70	12.38	8.88	343	3.57	< .001	1.93

Note. All findings supported by bootstrapping and nonparametric Mann-Whitney *U* tests. The corrected *p* value for mothering and career subjective norm items is $\alpha = .008$.

Table T.5. ***Belief-based perceived control for women who intend to mother and women who intend to be childfree.***

	Mothering Groups				*t*-test Statistics			
	Intended $N = 297$		Not Intended $N = 48$					
Perceived Control Items	*M*	*SD*	*M*	*SD*	*df*	*t*	*p* value	Cohen's *d*
Mothering								
Financially stable	32.53	13.44	30.77	14.32	343	0.83	.41	0.50
Stable relationships	38.17	10.77	28.71	13.15	57.64	4.74	< .001	1.77
Impact career	16.11	12.08	14.73	15.40	56.72	0.59	.56	0.20
Social supports	38.45	11.17	29.88	14.70	56.10	3.87	< .001	1.27
Health	34.48	12.49	28.02	14.81	58.30	2.86	.006	1.15
Spouse	36.49	11.52	29.65	12.33	343	3.60	< .001	2.20
Other time commitments	8.37	7.87	2.67	2.02	286.10	10.51	< .001	1.06
Unstable lifestyle	36.35	14.12	36.96	14.63	61.98	-0.28	.79	-0.23
Career								
Education	43.65	8.43	43.94	8.45	343	-0.22	.83	-0.71
Social supports	40.15	8.85	38.33	9.49	343	1.31	.19	0.75

Note. All findings supported by bootstrapping and nonparametric Mann-Whitney *U* tests. The corrected *p* value for mothering items is $\alpha = .006$ and the corrected *p* value for career items is $\alpha = .025$.

Table T.6. ***Direct attitudes for women who intend to mother and women who intend to be childfree.***

	Mothering Groups							
	Intended		Not Intended		*t*-test Statistics			
Attitudinal Items	*M*	*SD*	*M*	*SD*	*df*	*t*	*p* value	Cohen's *d*
Mothering								
Pleasant	6.39	0.95	2.90	1.72	51.78	13.77	< .001	3.44
Rewarding	6.58	1.03	3.42	2.20	50.38	9.78	< .001	2.30
Wise	5.64	1.20	2.83	1.28	343	14.86	< .001	8.92
Meaningful	6.66	1.02	4.30	2.03	50.91	7.89	< .001	1.90
Good	6.36	0.88	3.36	1.60	51.74	12.69	< .001	3.18
Valuable	6.56	0.77	4.21	2.02	49.20	7.96	< .001	1.78
Beneficial	5.99	1.31	3.56	1.80	55.39	8.99	< .001	2.78
Enjoyable	6.03	1.54	3.07	1.91	57.25	10.20	< .001	3.71
Relaxing	2.38	1.13	1.54	0.74	86.82	6.68	< .001	1.39
Energizing	2.40	1.32	1.44	0.85	88.81	6.69	< .001	1.34
Career								
Pleasant	6.01	0.85	6.23	0.86	343	-1.64	.10	-2.38
Rewarding	6.50	0.73	6.56	0.82	343	-0.53	.60	-0.23
Wise	6.52	0.83	6.67	0.78	343	-1.15	.25	-0.75
Meaningful	6.22	0.80	6.51	0.65	343	-2.34	.02	-0.88
Good	6.62	0.61	6.88	0.39	89.32	-3.76	< .001	-0.78
Valuable	6.61	0.61	6.88	0.33	105.56	-4.51	< .001	-0.74
Beneficial	6.35	1.00	6.60	0.82	343	-1.64	.10	-0.62
Enjoyable	5.77	1.17	6.15	1.03	343	-2.08	.04	-0.97
Relaxing	2.57	1.15	2.63	1.25	343	-0.33	.74	-0.17
Energizing	2.97	1.41	3.23	1.94	55.28	-0.88	.38	-0.28

Note. All findings supported by bootstrapping and nonparametric Mann-Whitney *U* tests. The corrected *p* value for direct attitude items is $\alpha = .005$.